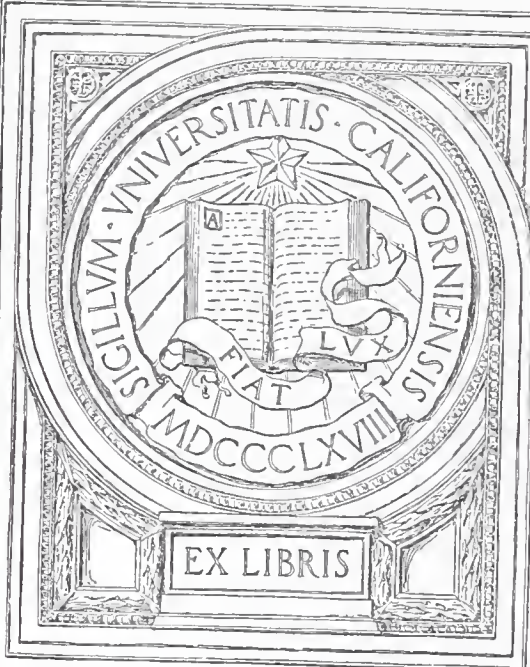



UNIVERSITY OF CALIFORNIA
SAN FRANCISCO MEDICAL CENTER
LIBRARY



EX LIBRIS



Digitized by the Internet Archive
in 2017 with funding from
The National Endowment for the Humanities and the Arcadia Fund

California and Western Medicine

OFFICIAL PUBLICATION OF THE
CALIFORNIA MEDICAL ASSOCIATION
ACCREDITED REPRESENTATIVE OF THE
NEVADA STATE MEDICAL ASSOCIATION
ACCREDITED REPRESENTATIVE OF THE
UTAH STATE MEDICAL ASSOCIATION



PRINTED AND EDITED

FOR THE

California Medical Association

Under the direction of the House of Delegates and Council

GEORGE H. KRESS, M. D.

EMMA W. POPE, M. D.

Editors

VOLUME XXXI

JULY TO DECEMBER, 1929



California Medical Association, Four-Fifty Sutter, San Francisco

OFFICERS of the CALIFORNIA MEDICAL ASSOCIATION 1929-1930

GENERAL OFFICERS

MORTON R. GIBBONS.....	President
515 Union Square Building, 350 Post Street, San Francisco	
LYELL C. KINNEY.....	President-Elect
510 Medico-Dental Building, 233 A Street, San Diego	
EDWARD M. PALLETTE.....	Speaker of the House of Delegates
Wilshire Medical Building, 1930 Wilshire Boulevard, Los Angeles	
JOHN H. GRAVES.....	Vice-Speaker of the House of Delegates
977 Valencia Street, San Francisco	
OLIVER D. HAMLIN.....	Chairman of Council
Federal Realty Building, Oakland	
T. HENSHAW KELLY.....	Chairman of Executive Committee
830 Medico-Dental Building, 490 Post Street, San Francisco	
EMMA W. POPE.....	Secretary-Treasurer
Room 2004, 450 Sutter Street, San Francisco	
GEORGE H. KRESS.....	Editor
245 Bradbury Building, 304 South Broadway, Los Angeles	
EMMA W. POPE.....	Editor
Room 2004, 450 Sutter Street, San Francisco	
HARTLEY F. PEART.....	General Counsel
1800 Hunter-Dulin Building, 111 Sutter Street, San Francisco	
HUBERT T. MORROW.....	Assistant General Counsel
Van Nuys Building, 210 West Seventh Street, Los Angeles	

COUNCILORS

MOTT H. ARNOLD (1932), 1220 First National Bank Building, 1007 Fifth Street, San Diego.....	First District
WILLIAM DUFFIELD (1930), 516 Auditorium Building, 427 West Fifth Street, Los Angeles.....	Second District
GAYLE G. MOSELEY (1931), Medical Arts Building, Redlands.....	Third District
FRED R. DE LAPPE (1932), 218 Beaty Building, 1024 J Street, Modesto.....	Fourth District
ALFRED L. PHILLIPS (1930), Farmers and Merchants Bank Building, Santa Cruz.....	Fifth District
WALTER B. COFFEY (1931), 501 Medical Building, 909 Hyde Street, San Francisco.....	Sixth District
OLIVER D. HAMLIN (1932), Federal Realty Building, Oakland.....	Seventh District
JUNIUS B. HARRIS (1930), Medico-Dental Building, 1127 Eleventh Street, Sacramento.....	Eighth District
HENRY S. ROGERS (1931), Petaluma.....	Ninth District

COUNCILORS-AT-LARGE

GEORGE G. HUNTER (1932), 910 Pacific Mutual Building, 523 West Sixth Street, Los Angeles.	
RUGGLES A. CUSHMAN (1930), 632 North Broadway, Santa Ana.	
GEORGE H. KRESS (1931), 245 Bradbury Building, 304 South Broadway, Los Angeles.	
JOSEPH CATTON (1932), 825 Medico-Dental Building, 490 Post Street, San Francisco.	
T. HENSHAW KELLY (1930), 830 Medico-Dental Building, 490 Post Street, San Francisco.	
ROBERT A. PEERS (1931), Colfax.	

STANDING COMMITTEES

Committee on Associated and Affiliate Societies	
Harold A. Thompson, San Diego.....	1932
William Bowman, Los Angeles.....	1931
T. Henshaw Kelly, San Francisco.....	1930
Committee on Extension Lectures	
James F. Churchill, San Diego.....	1932
Robert T. Legge (chairman), Berkeley.....	1931
Robert A. Peers, Colfax.....	1930
The Secretary, ex-officio.	
Committee on Health and Public Instruction	
Fred B. Clarke, Long Beach.....	1932
Gertrude Moore (chairman), Oakland.....	1931
Henry S. Rogers, Petaluma.....	1930
Committee on Hospitals, Dispensaries and Clinics	
John C. Ruddock, Los Angeles.....	1932
Walter B. Coffey, San Francisco.....	1931
Gayle G. Moseley (chairman), Redlands.....	1930
Committee on Industrial Medical Practice	
Packard Thurber, Los Angeles.....	1932
Ross W. Harbaugh, San Francisco.....	1931
Gayle G. Moseley, Redlands.....	1930
Committee on Medical Economics	
John H. Graves (chairman), San Francisco.....	1932
William T. McArthur, Los Angeles.....	1931
Ruggles A. Cushman, Santa Ana.....	1930
Committee on Medical Education and Hospitals	
George Dock (chairman), Pasadena.....	1932
H. A. L. Ryfkogel, San Francisco.....	1931
George G. Hunter, Los Angeles.....	1930
Committee on Medical Defense	
George G. Reinle, Oakland.....	1932
J. L. Maupin, Sr., Fresno.....	1931
Mott H. Arnold, San Diego.....	1930
Committee on Membership and Organization	
Harlan Shoemaker, Los Angeles.....	1932
LeRoy Brooks, San Francisco.....	1931
Jesse W. Barnes, Stockton.....	1930
The Secretary, ex-officio.	
Committee on History and Obituaries	
Charles D. Ball, Santa Ana.....	1932
Percy T. Phillips, Santa Cruz.....	1931
Emmet Rixford, San Francisco.....	1930
The Secretary, ex-officio.	
The Editor, ex-officio.	
Committee on Publications	
Alfred C. Reed, San Francisco.....	1932
Percy T. Magan, Los Angeles.....	1931
Frederick F. Gundrum, Sacramento.....	1930
The Secretary, ex-officio.	
The Editor, ex-officio.	
Committee on Public Policy and Legislation	
Junius B. Harris (chairman), Sacramento.....	1932
William Duffield, Los Angeles.....	1931
Joseph Catton, San Francisco.....	1930
The President, ex-officio.	
The President-Elect, ex-officio.	
Committee on Scientific Work	
Emma W. Pope (chairman), San Francisco	
Karl Schupp, San Francisco.....	1932
Lemuel P. Adams, Oakland.....	1931
Robert V. Day, Los Angeles.....	1930
Ernest H. Falconer, San Francisco.....	1930
Sumner Everingham, Oakland.....	1930
Committee on Arrangements	
1930 Annual Session—Del Monte, April 28 to May 1, 1930	
T. Henshaw Kelly (chairman), San Francisco.	
Joseph Catton, San Francisco.	
Martin McAulay, Monterey.	
Garth Parker, Salinas.	
William H. Bingaman, Salinas.	
Alfred L. Phillips, Santa Cruz.	
The Secretary, ex-officio.	

*Secretaries of the Sections on General Medicine and General Surgery.

Index—California and Western Medicine, Volume XXXI

July to December, 1929

California and Western Medicine is annually issued in two volumes; the first from January to June inclusive, and the second from July to December, inclusive.

Arrangement of Index

This index is arranged under the following heads:

- I. Key to Abbreviations.
- II. Authors.
- III. Subject Index.
- IV. Lure of Medical History.
- V. Editorials.
- VI. Bedside Medicine.
- VII. California Medical Association.
(a) Component County Societies.
- VIII. Nevada State Medical Association.
(a) Component County Societies.
- IX. Utah State Medical Association.
(a) Component County Societies.
- X. Deaths.
- XI. Miscellany.
- XII. Book Reviews.
- XIII. Index to Board of Medical Examiners' News Items.

American Medical Association Quarterly Cumulative Index

Note: Members who wish to consult a general medical index are referred to the Quarterly Cumulative Index of the American Medical Association.

I. KEY TO ABBREVIATIONS.

Add.—Address.

Or.—Original Article.

C. R.—Case Report.

B. M.—Bedside Medicine.

Ed.—Editorial.

M. T.—Medicine Today.

C. N.—Clinical Notes.

L. M. H.—Lure of Medical History.

* * *

II. AUTHORS

- Alderson, Harry E.—Overtreatment of Skin Diseases (M. T.), 290.
- Allen, Charles Lewis—New Views as to Epilepsy (M. T.), 356; Psychiatry in a General Hospital (Or.), 398.
- Askey, John Martin—Agranulocytic Angina (C. R.), 50.
- Babcock, Edward S.—Masked Otitis Media and Mastoiditis in Infants (Or.), 90.
- Barnes, R. W.—Prostatic Massage (M. T.), 436.
- Bonar, Barnet E.—Epidemic Cerebro-Spinal Meningitis (Or.), 316.
- Bonn, H. K.—Postoperative Pulmonary Embolism (Or.), 408.
- Botsford, Mary E.—The Stimulating Effect of Carbon Dioxid Inhalations in Dementia Praecox Catatonia (Or.), 20.
- Boyce, William A.—Phyltetular Keratitis (M. T.), 354.
- Breyer, J. H.—Pancreatitis—Its Treatment, as Related to Gall-Bladder Infection (Or.), 382.
- Brown, Philip King—Tuberculosis in a General Hospital (Or.), 41.
- Budge, W. H.—Tumors of the Carotid Body (C. R.), 423.
- Burrows, Montrose T.—Adrenalin as a Clinical Test of Infection and Gangrene of the Scalp (C. R.), 342.
- Chappel, Halbert W.—Injuries to the Back (Or.), 180.
- Chipman, Ernest Dwight—Social Aspects of Dermatology (Or.), 11; Pruritus of Anus and Vulva, (B. M.), 282.
- Connor, Charles L.—The Physiologic and Pathologic Significance of the Lipochromes (Or.), 250.
- Cooley, Chester L.—Gwathmey Analgesia (Or.), 195.
- Cordes, F. C.—Toti-Mosher Operation in Obstruction of the Nasolachrymal Duct (Or.), 268.
- Courville, Cyril B.—Visual Disturbances Caused by Pituitary Tumors (M. T.), 290; Tumors of the Pituitary Body (M. T.), 150; Brain Tumor (Or.), 100; Pituitary Tumors and Skeletal Changes (M. T.), 434.
- Culver, George D.—Painful Ear Nodule of Winkler and Foerster (Or.), 414.
- Davis, Andrew S.—Adenocarcinoma in a Fourteen-Year-Old Boy (C. R.), 139.
- Davis, Kenneth S.—Intussusception—Its Roentgenographic Diagnosis (Or.), 330.
- Dock, William—William Charles Wells (L. M. H.), 340.
- Ebersson, Frederick—The So-Called Filterable Tuberculosis Virus (M. T.), 354.
- Eloesser, Leo—Treatment of Fractures (Or.), 254.
- Emge, Ludwig A.—Gwathmey Analgesia (Or.), 195.
- Ewer, Edward N.—Inversion of the Uterus (Or.), 259.
- Falls, Frederick Howard—Concerning the Relationship Between Fibroids of the Uterus and the Thyroid Gland (Or.), 305; Eclampsogenic Toxemia (Or.), 81.
- Firestone, Fred—Vaccine Therapy in Infectious Bronchitis and Asthma (Or.), 336.
- Fischel, K.—Pulmonary Tuberculosis—Nonapical Infiltrations (Or.), 237.
- Geiger, J. C.—Food Poisoning (Or.), 328; Tularemia in Nevada (Or.), 38.
- Gerstle, Mark, Jr.—Pseudohypertrophic Muscular Dystrophy (C. R.), 53.
- Goddard, Wilson Parker—Pseudohypertrophic Muscular Dystrophy (C. R.), 53.
- Gottlieb, A.—Claw-Toes (M. T.), 64.
- Green, Aaron S.—Ophthalmic Delusions (Or.), 198.
- Guedel, Arthur E.—The Stimulating Effect of Carbon Dioxid Inhalations in Dementia Praecox Catatonia (Or.), 20.
- Gundrum, Lawrence K.—Deafness and the Child (Or.), 134.
- Hager, B. H.—Interstitial Cystitis (Or.), 262.
- Hall, George Joyce—Pruritus of the Anus and Vulva (B. M.), 282.
- Hansen, E. L.—Thyroid Gland Enlargement (C. R.), 52.
- Happ, W. M.—Pulmonary Tuberculosis in Infants and Young Children (Or.), 271.
- Harbinson, J. Edward—Amiodoxyl Benzoate in the Treatment of Arthritis (Or.), 24.
- Harding, M. C.—Fracture of the Pelvis (Or.), 320.
- Hatch, Floyd E.—Partial Gastric Resection Under Local Anesthesia (Or.), 30.
- Henderson, R. G.—Anesthesia in the Smaller Communities (Or.), 267.
- Hinman, Frank—The Surgery of Tumors of the Bladder (Or.), 116.
- Holden, W. B.—Acute Intestinal Obstruction—Its Treatment (Or.), 403.
- Holder, Hall G.—Cardiovascular Complications (Or.), 168.
- Holman, Emile—Postoperative Massive Atelectasis (Or.), 386.
- Hurwitz, Samuel H.—John Bostock (L. M. H.), 137.
- Ingham, Samuel D.—Psychology in the Practice of Medicine (Or.), 173.
- Jones, J. Roy—Masked Otitis Media and Mastoiditis in Infants (Or.), 90.
- Joyce, Thomas F.—California State Narcotic Hospital (Or.), 190.
- Kalichman, George S.—Coccidioidal Granuloma (C. R.), 141.
- Kaplan, Harry E.—The Aschheim-Zondek Hormone Test for Pregnancy (Or.), 412.
- Kiger, W. H.—A Review of Over Three Hundred Cases of Cancer of the Rectum (Or.), 313.
- Kilgore, Eugene S.—The Heart (Or.), 44.
- Kirklin, B. R.—A Practical Consideration of Cholecystography (Or.), 86; The Roentgen Ray in the Diagnosis of Primary Carcinoma of the Lung (Or.), 247.

Klingman, Vera—Thyroid Gland Enlargement (C. R.), 52.

Lamb, Edward J.—Mesenteric Chylous Cyst (C. R.), 139.

Langley, Robert William—Coronary Artery Disease (Or.), 112.

Leake, Chauncey D.—The Stimulating Effect of Carbon Dioxid Inhalations in Dementia Praecox Catatonica (Or.), 20.

Legge, Robert T.—Bernardino Ramazzini (L. M. H.), 201.

Lewis, Eugene R.—Extensive Impairments from Minor Ear Lesions (C. R.), 341.

Lindenberg, Fred—Uterine Fibroids (Or.), 93.

Lisser, H.—A Goiter Survey of the High School Students of Contra Costa County, California (Or.), 33.

Madsen, Leo J.—Coccidioidal Granuloma (C. R.), 141.

Manwaring, W. H.—Bacteriology (M. T.), 64; The "Crystalloid Frog" (M. T.), 354; Secondary Autointoxication (M. T.), 150; Economic Value of Mosquito Control (M. T.), 436.

Martin, R. C.—Toti-Mosher Operation in Obstruction of the Nasolachrymal Duct (Or.), 268.

Mathes, Mary E.—Postoperative Massive Atelectasis (Or.), 386.

Matzger, Edward—Impressions Gathered from the Portland Meeting (M. T.), 434.

Mayo, William J.—Tribute to John F. Binnie (Or.), 49.

McCool, Joseph L.—Certain Operative Procedures Employed in Ophthalmology (Or.), 390.

Meads, Albert M.—Chronic Pyuria in Children (Or.), 405.

Meyer, K. F.—Tularemia in Nevada (Or.), 38.

Miller, Rachel K.—A Goiter Survey of the High School Students of Contra Costa County, California (Or.), 33.

Musser, J. H.—Functional Disorders (Or.), 1; Mouth Infections in Relation to Systemic Disease (Or.), 177.

Myers, Glenn—Mental Hygiene Problems, Psychiatry and the General Practitioner (Or.), 323.

O'Connor, Roderic—Monocular Occlusion in Apparently Orthophoric Emmetropes (Or.), 253.

Olmsted, E. H.—Medical Terminology (L. M. H.), 274.

Owen, Gilbert R.—An Old Book by Benjamin Rush (L. M. H.), 418.

Parker, Carl — Intussusception—Its Roentgenographic Diagnosis (Or.), 330.

Peters, Lindsay—Vagitus Uterinus (C. R.), 278.

Peterson, A.—Interstitial Cystitis (Or.), 262.

Phillips, Percy T.—Discipline of the Licensed Practitioner (Or.), 124.

Pottenger, F. M.—Bacterial Allergy (M. T.), 435.

Pouppirt, P. S.—Treatment of Parkinson's Syndrome by Fever Produced by Baths (Or.), 192.

Read, J. Marion—Heart Block—Complete, Compensated (Or.), 12.

Reichert, F. L.—Circulatory Disturbances of the Extremities (Or.), 223.

Richards, Robert L.—Pruritus of the Anus and Vulva (B. M.), 282.

Rogers, W. L.—Treatment of Fractures (Or.), 254.

Rowntree, Leonard G.—The Selection of Diuretics (Or.), 103.

Sanderson, G. H.—Goiter Operations in Mental Diseases (Or.), 255.

Scholtz, Moses—Carbon Arc Versus Quartz Lamp in Dermatologic Therapeutics (Or.), 183; Trauma as Localizer of Systemic Dermatoses (M. T.), 63.

Schultz, E. W.—The Bacteriophage as a Therapeutic Agent (Or.), 5.

Shaw, Edward B.—Meningococcus Infection—Its Treatment (Or.), 309.

Shepardson, H. Clare—A Goiter Survey of the High School Students of Contra Costa County, California (Or.), 33.

Smyth, M.—Goiter Operations in Mental Diseases (Or.), 255.

Snure, Henry—Opaque Media in Diagnosis of Maxillary Sinusitis (M. T.), 151.

Stockton, A. B.—Coccidioidal Granuloma (C. R.), 278.

Straub, George F.—Desmoid Tumors (Or.), 186.

Strode, J. E.—Brachial Plexus Block Anesthesia (Or.), 17; A Closed Method for Draining Acute Empyema (C. N.), 422.

Sutton, T. L.—Combating Congenital Syphilis (Or.), 242.

Thayer, W. S.—Reminiscences of Osler in the Early Baltimore Days (Or.), 161. Individualism in Medicine (Or.), 377.

Thelander, H. E.—Meningococcus Infection—Its Treatment (Or.), 309.

Tillotson, Rulon S.—Complete Obstruction of Esophagus Due to Bolus of Food (C. R.), 280. Congenital Cystic Disease of the Lung (C. R.), 420.

Towne, E. B.—Control of Intractable Pain (Or.), 98.

Van Becelaere, J.—Pharmacy of the Ancient Egyptians (L. M. H.), 47.

Voorsanger, William C.—Vaccine Therapy in Infectious Bronchitis and Asthma (Or.), 336.

Ward, Robertson—Acute General Peritonitis (Or.), 395.

Wesson, Miley B.—Traumatic Hydrocele (Or.), 127.

Weymann, M. F.—Corneal Tattooing (M. T.), 291.

Woolf, M. S.—A Lighted Kelly Anoscope (C. N.), 344; Pruritus of the Anus and Vulva (B. M.), 282.

III. SUBJECT INDEX

A

Acute Empyema, A Closed Method for Draining—J. E. Strode (C. N.), 422.

Acute General Peritonitis—Robertson Ward (Or.), 395.

Acute Intestinal Obstruction, Its Treatment—W. B. Holden (Or.), 403.

Adenocarcinoma in a Fourteen-Year-Old Boy—Andrew S. Davis (C. R.), 139.

Adrenalin as a Clinical Test of Infection and Gangrene of the Scalp—Montrose T. Burrows (C. R.), 342.

Agranulocytic Angina—John Martin Askey (C. R.), 50.

Amiodoxyl Benzoate in the Treatment of Arthritis—J. Edward Harbinson (Or.), 24.

Anesthesia, Brachial Plexus Block—J. E. Strode (Or.), 17.

Anesthesia in Smaller Communities—R. G. Henderson (Or.), 267.

Arthritis, Amiodoxyl Benzoate in the Treatment of—J. Edward Harbinson (Or.), 24.

Aschheim-Zondek Hormone Test for Pregnancy, The—Harry E. Kaplan (Or.), 412.

Atelectasis, Postoperative, Massive—Mary E. Mathes and Emile Holman (Or.), 386.

B

Back, Injuries to—Halbert W. Chappel (Or.), 180.

Bacterial Allergy—F. M. Pottenger (M. T.), 435.

Bacteriophage as a Therapeutic Agent—E. W. Schultz (Or.), 5.

Binnie, John F., Tribute to—William J. Mayo (Or.), 49.

Bladder Tumors, Surgery of—Frank Hinman (Or.), 116.

Brachial Plexus Block Anesthesia—J. E. Strode (Or.), 17.

Brain Tumor—Cyril B. Courville (Or.), 100.

C

Cancer of the Rectum—Review of Over Three Hundred Cases—W. H. Kiger (Or.), 313.

Carbon Arc Versus Quartz Lamp in Dermatologic Therapeutics—Moses Scholtz (Or.), 183.

Carcinoma of the Lung, The Roentgen Ray in the Diagnosis of—B. R. Kirklin (Or.), 247.

Cardiovascular Complications—Hall G. Holder (Or.), 168.

Certain Operative Procedures Employed in Ophthalmology—Joseph L. McCool (Or.), 390.

Cholecystography, A Practical Consideration of—B. R. Kirklin (Or.), 86.

Chronic Pyuria in Children—Albert M. Meads (Or.), 405.

Circulatory Disturbances of the Extremities—F. L. Reichert (Or.), 233.	Functional Diagnosis of the Reticulo-Endothelium—W. H. Manwaring (M. T.), 64.	Mesenteric Chylous Cyst—Edward J. Lamb (C. R.), 139.
Claw-Toes—A. Gottlieb (M. T.), 64.	Functional Disorders—J. H. Musser (Or.), 1.	Monocular Occlusion in Apparently Orthophoric Emmetropes—Roderic O'Connor (Or.), 253.
Coccaldioidal Granuloma—A. B. Stockton (C. R.), 278; George S. Kalichman and Leo J. Madsen (C. R.), 141.	G	Mouth Infections in Relation to Systemic Disease—J. H. Musser (Or.), 177.
Combating Congenital Syphilis—L. B. Dickey and T. L. Sutton (Or.), 242.	Gastric Resection, Partial, Under Local Anesthesia—Floyd F. Hatch (Or.), 30.	N
Complete Obstruction of Esophagus Due to Bolus of Food—Rulon S. Tillotson (C. R.), 280.	Goiter Operations in Mental Diseases—G. H. Sanderson and M. Smyth (Or.), 255.	Narcotic Hospital, California State—Thomas F. Joyce (Or.), 190.
Congenital Cystic Disease of the Lung—Rulon S. Tillotson (C. R.), 420.	Goiter Survey of the High School Students of Contra Costa County, California—H. Lisser, H. Clare Shepardson, Rachel K. Miller (Or.), 33.	Nonapical Infiltrations of Pulmonary Tuberculosis—K. Fischel (Or.), 237.
Control of Intractable Pain—E. B. Towne (Or.), 98.	Gwathmey Analgesia—Ludwig A. Emge and Chester L. Cooley (Or.), 195.	O
Coronary Artery Disease—Robert William Langley (Or.), 112.	H	Opaque Media in Diagnosis of Maxillary Sinusitis—Henry Snure (M. T.), 151.
"Crystalloid Frog"—W. H. Manwaring (M. T.), 354.	Heart-Block, Complete, Compensated—J. Marion Read (Or.), 12.	Operative Procedures Employed in Ophthalmology, Certain—Joseph L. McCool (Or.), 390.
Cystitis, Interstitial—A. Peterson and B. H. Hager (Or.), 262.	Heart, The—Eugene S. Kilgore (Or.), 44.	Ophthalmic Delusions—Aaron S. Green (Or.), 198.
D	Hydrocele, Traumatic—Miley B. Westson (Or.), 127.	Osler, Reminiscences of, in the Early Baltimore Days—W. S. Thayer (Or.), 161.
Deafness and the Child—Lawrence K. Gundrum (Or.), 134.	I	Otitis Media, Masked and Mastoiditis in Infancy—Edward S. Babcock and J. Roy Jones (Or.), 90.
Dementia Praecox Catatonia—The Stimulating Effect of Carbon Dioxide in—Chauncey D. Leake, Arthur E. Guedel, Mary E. Botsford (Or.), 20.	Impressions Gathered From the Portland Meeting—Edward Matzger (M. T.), 434.	P
Dermatology, Social Aspects of—Ernest Dwight Chipman (Or.), 11.	Individualism in Medicine—W. S. Thayer (Or.), 377.	Pain, Control of Intractable—E. B. Towne (Or.), 98.
Desmoid Tumors—George F. Straub (Or.), 186.	Injuries to the Back—Halbert W. Chappel (Or.), 180.	Painful Ear Nodule of Winkler and Foerster—George D. Culver (Or.), 414.
Discipline of the Licensed Practitioner—Percy T. Phillips (Or.), 124.	Interstitial Cystitis—A. Peterson and B. H. Hager (Or.), 262.	Pancreatitis—Its Treatment as Related to Gall-Bladder Infection—J. H. Breyer (Or.), 382.
Diuretics, The Selection of—Leonard G. Rowntree (Or.), 103.	Intestinal Obstruction, Acute—Its Treatment—W. B. Holden (Or.), 403.	Parkinson's Syndrome—Treatment by Fever Produced by Baths—P. S. Pouppirt (Or.), 192.
E	Intussusception—Its Roentgenographic Diagnosis—Kenneth S. Davis and Carl Parker (Or.), 330.	Partial Gastric Resection Under Local Anesthesia—Floyd F. Hatch (Or.), 30.
Eclampsogenic Toxemia—Frederick Howard Falls (Or.), 81.	Inversion of the Uterus—Edward N. Ewer (Or.), 259.	Pelvis, Fracture of the—M. C. Harding (Or.), 320.
Economic Value of Mosquito Control—W. H. Manwaring (M. T.), 436.	L	Peritonitis, Acute General—Robertson Ward (Or.), 395.
Epidemic Cerebrospinal Meningitis—Barnet E. Bonar (Or.), 316.	Lighted Kelly Anoscope—M. S. Woolf (C. N.), 344.	Phlyctenular Keratitis—Wm. A. Boyce (M. T.), 354.
Epilepsy, New Views as to—Charles Lewis Allen (M. T.), 356.	Lipochromes, Physiologic and Pathologic Significance of—Charles C. Connor (Or.), 250.	Physiologic and Pathologic Significance of the Lipochromes—Charles C. Connor (Or.), 250.
Extensive Impairments from Minor Ear Lesions—Eugene R. Lewis (C. R.), 341.	M	Pituitary Tumors and Skeletal Changes—Cyril B. Courville (M. T.), 434.
F	Mastoiditis in Infancy and Masked Otitis Media—Edward S. Babcock and J. Roy Jones (Or.), 90.	Poisoning, Food—J. C. Geiger (Or.), 328.
Fibroids of the Uterus, Relationship Between and Thyroid Gland—Frederick Howard Falls (Or.), 305.	Medical Terminology—E. H. Olmsted (L. M. H.), 274.	Postoperative Massive Atelectasis—Mary E. Mathes and Emile Holman (Or.), 386.
Fibroids, Uterine—Fred Lindenberg (Or.), 93.	Meningitis, Epidemic Cerebrospinal—Barnet E. Bonar (Or.), 316.	Postoperative Pulmonary Embolism—H. K. Bonn (Or.), 408.
Filterable Tuberculosis Virus, The So-Called—Frederick Ebersson (M. T.), 354.	Meningococcus Infection—Its Treatment—Edward B. Shaw and H. E. Thelander (Or.), 309.	Practical Consideration of Cholecystography—B. R. Kirklin (Or.), 86.
Food Poisoning—J. C. Geiger (Or.), 328.	Mental Hygiene Problems, Psychiatry and the General Practitioner—Glenn Myers (Or.), 323.	Pregnancy Test, The Aschheim-Zondek Hormone—Harry E. Kaplan (Or.), 412.
Fracture of the Pelvis—M. C. Harding (Or.), 320.		
Fractures, Treatment of—Leo Eloesser and W. L. Rogers (Or.), 254.		

Prostatic Massage—R. W. Barnes (M. T.), 436.	Tuberculosis in a General Hospital—Philip King Brown (Or.), 41.	Referendum Ballots on Incorporation of the California Medical Association, 58.
Pseudohypertrophic Muscular Dystrophy—Mark Gerstle Jr. and Wilson Parker Goddard (C. R.), 53.	Tularemia in Nevada—J. C. Geiger, K. F. Meyer (Or.), 38.	Rockefeller Foundation, 428.
Psychiatry and the General Practitioner—Mental Hygiene Problems—Glenn Myers (Or.), 323.	Tumor, Brain—Cyril B. Courville (Or.), 100.	Some Trends in Hospital Treatment in Relation to the "High Cost of Medical Care," 431.
Psychiatry in a General Hospital—Charles Lewis Allen (Or.), 398.	Tumors of the Carotid Body—W. H. Budge (C. R.), 423.	Telephoned Narcotic Prescriptions, 431.
Psychology in the Practice of Medicine—Samuel D. Ingham (Or.), 173.	Tumors of the Pituitary Body—Cyril B. Courville (M. T.), 150.	The Bacteriophage—Viewpoints of Schultz of Stanford, 58.
Pulmonary Tuberculosis—Nonapical In-Young Children—Its Clinical Diagnosis—W. M. Happ (Or.), 271.	U	To What Degree Should the Use of the M. D. Degree Be Circumscribed? 352.
Pulmonary Tuberculosis—Nonapical Infiltrations—K. Fischel (Or.), 237.	Uterine Fibroids—Fred Lindenberg (Or.), 93.	Woman's Auxiliary of C. M. A., 351.
Pyuria in Children, Chronic—Albert M. Meads (Or.), 405.	V	VI. BEDSIDE MEDICINE
R	Vaccine Therapy in Infectious Bronchitis and Asthma—William C. Voor-sanger and Fred Firestone (Or.), 336.	Epidermomycosis, 345.
Rectum, Cancer of the—Review of Over Three Hundred Cases—W. H. Kiger (Or.), 313.	Vagitus Uterinus—Lindsay Peters (C. R.), 278.	Headache, 143.
Relationship Between Fibroids of the Uterus and the Thyroid Gland—Frederick Howard Falls (Or.), 305.	W	Injection Treatment of Varicose Veins, 207.
Reminiscences of Osler in the Early Baltimore Days—W. S. Thayer (Or.), 161.	William Charles Wells—William Dock (L. M. H.), 340.	Obscure Gall-Bladder Disease, 424.
Roentgen Ray in the Diagnosis of Primary Carcinoma of the Lung—B. F. Kirklin (Or.), 247.	IV. LURE OF MEDICAL HISTORY	Pruritus of Anus and Vulva, 282.
S	An Old Book by Benjamin Rush—Gilbert R. Owen, 418.	Vertigo, 55.
Secondary Autointoxication—W. H. Manwaring (M. T.), 150.	Bernardino Ramazzini—Robert T. Legge, 201.	VII. CALIFORNIA MEDICAL ASSOCIATION
Selection of Diuretics—Leonard G. Rowntree (Or.), 103.	John Bostock—Samuel H. Hurwitz, 137.	(a) Component County Societies
Social Aspects of Dermatology—Ernest Dwight Chipman (Or.), 11.	Medical Terminology—E. H. Olmsted, 274.	Alameda, 153, 292, 437.
Stimulating Effect of Carbon Dioxid Inhalations in Dementia Praecox Catatonica—Chauncey D. Leake, Arthur E. Guedel, Mary E. Botsford (Or.), 20.	Pharmacy of the Ancient Egyptians—J. Van Becelaere, 47.	Contra Costa, 292, 437.
Surgery of Tumors of the Bladder—Frank Hinman (Or.), 116.	William Charles Wells—William Dock, 340.	Fresno, 65, 292, 365, 437.
Syphilis, Combating Congenital—L. B. Dickey and T. L. Sutton (Or.), 242.	V. EDITORIALS	Kern, 365.
Systemic Disease, Mouth Infections in Relation to—J. H. Musser (Or.), 177.	A Basic Science Law—Would It Better Conditions in California? 285.	Mendocino, 293.
T	A Bird's-Eye Survey of C. M. A. Membership Figures, 146.	Napa, 437.
Thyroid Gland Enlargement—E. L. Hansen, Vera Klingman (C. R.), 52.	A California Plan to Combat State Medicine, 348.	Placer, 154, 438.
Toti-Mosher Operation in Obstruction of Nasolachrymal Duct—R. C. Martin and F. C. Cordes (Or.), 268.	Better Health Foundation, 145.	Sacramento, 66, 154, 365, 438.
Toxemia, Eclamptogenic—Frederick Howard Falls (Or.), 81.	Do You Save Your Journals? 149.	San Bernardino, 66, 155, 366, 439.
Trauma as Localizer of Systemic Dermatoses—Moses Scholtz (M. T.), 63.	Example of Present-Day Expert Medical Testimony, 289.	San Diego, 155, 217, 292, 439.
Traumatic Hydrocele—Miley B. West-son (Or.), 127.	Fall Term of County Societies—Some Queries and Comments, 288.	San Joaquin, 66, 366, 439.
Treatment of Fractures—Leo Eloesser and W. L. Rogers (Or.), 254.	"Ford Attacks Medical Ethics," 59.	San Mateo, 67.
Treatment of Parkinson's Syndrome with Fever Produced by Baths—P. S. Pouppirt (Or.), 192.	Have You Sent in Your Ballot on Incorporation? 149.	Santa Barbara, 67, 217, 292, 367, 440.
	Incorporation of C. M. A.—New Constitution and By-Laws, 349.	Tulare, 440.
	Licensure Problems in California, 350.	MEDICAL SOCIETY REPORTS
	Los Angeles Wine Tonic Ordinance, 429.	American Medical Association—Abstract of Proceedings of the House of Delegates, July 8-12, 1929, 223.
	Meetings of County Societies and Hospital Staffs—Suggestions of Summer Outing Meeting, 147.	California Medical Association, 65, 152, 216, 292, 357, 437.
		Extension Lecture Program, 294.
		Minutes of the Council:
		180th Meeting 152
		181st Meeting 357
		182nd Meeting 358
		183rd Meeting 359
		184th Meeting 361
		185th Meeting 361
		VIII. NEVADA STATE MEDICAL ASSOCIATION
		Nevada State Medical Association, 70, 156, 296, 368, 442.
		(a) Component County Societies
		Washoe, 70, 297, 368.

IX. UTAH STATE MEDICAL ASSOCIATION

Utah State Medical Association, 71, 156, 218, 368, 443.

Transactions of the House of Delegates, 218.

(a) Component County Societies

Central Utah, 72.

Salt Lake City, 71, 369, 443.

X. DEATHS

Ainsworth, Frank Kenley, 155.

Blair, James C., 294.

Bonthius, Andrew Frederick, 155 & 217.

Clark, Fred Pope, 440.

Crabtree, Hezediah T., 70.

Foster, Ralph de Lecaire, 367.

Goetz, Alice Littlejohn, 217.

Haggart, Fred Stuart, 440.

Hazen, John Charles Edward, 294.

Holsclaw, Florence Mabel, 441.

Howell, Ernest Titus Dean, 217.

Jackson, Paul Kingsley, 294.

Jones, William Farrington, 367.

Kelsey, Arthur Louis, 70.

Koons, Henry Hagus, 440.

Leisenring, Luther M., 155.

Martin, Jean Marion, 367.

Nutting, Charles Wilbur, 217.

O'Brien, Aloysius Paul, 70.

Oliver, John Edward, 367.

Parker, Joseph Alexander, 367.

Reed, Clarence E., 70.

Royer, Daniel Franklin, 441.

Six, Clarence Logan, 70.

Smith, J. Wesley, 440.

Tebbe, William Edward, 294.

Yates, William Charles, 368.

Young, J. Audley, 440.

XI. MISCELLANY

California Board of Medical Examiners, 78, 159, 229, 303, 376, 448.

Correspondence, 75, 227, 371, 444.

Department of Public Health, 77, 159, 228, 302, 375, 447.

Legislative Bills, 159.

News, 73, 157, 226, 299, 370, 444.

Twenty-five Years Ago, 76, 158, 227, 300, 374, 446.

Woman's Auxiliary of the California Medical Association, 68.

XII. BOOK REVIEWS

Acute Infectious Diseases—Jay Frank Schamberg and John A. Kolmer, September, 12.

A Handbook for the Diabetic—Alfred H. Rowe, October, 14.

A Manual of Diseases of the Nose, Throat and Ear—E. B. Gleason, October, 11.

American Medicine and the People's Health—Harry M. Moore, November, 14.

Angina Pectoris—Harlow Brooks, August, 11.

Arthritis and Rheumatoid Conditions—Their Nature and Treatment—Ralph Pemberton, December, 12.

Asthma—Its Diagnosis and Treatment—William S. Thomas, November, 14.

Bacteriology for Nurses—Charles F. Carter, October, 14.

Care of the Mouth and Teeth—Harry J. Burknep, October, 14.

Devils, Drugs and Doctors—Howard W. Haggard, October, 12.

Diabetes and Its Treatment—Friedrick M. Allen, November, 12.

Diabetic Surgery—Leland S. McKittrick and Howard F. Root, November, 14.

Diseases and Deformities of the Spine and Thorax—Arthur Steindler, August, 12.

Diseases of the Ear, Nose and Throat—Medical and Surgical—Wendell Christopher Phillips, October, 16.

Food, Nutrition and Health—E. V. McCollum and Nina Simmonds, July, 11.

Getting Ready to Be a Mother—Carolyn Conant Van Blarcom, November, 11.

Gonorrhea and Kindred Affections—George Robertson Livermore, November, 11.

Injection Treatment of Internal Hemorrhoids—Marion C. Pruitt, September, 11.

Old Age, the Major Involution, the Physiology and Pathology of the Aging Process—Alfred Scott Warthin, August, 11.

Otology, Manual of—Gorham Bacon and Truman Laurence Saunders, December, 11.

Pediatrics for the General Practitioner—Harry Monroe, July, 11.

Physical Examination and Diagnostic Anatomy—Charles B. Slade, October, 16.

Pioneer Medicine in Western Pennsylvania—Theodore Diller, September, 12.

Principles of Pathology for Practitioners and Students—H. D'Arcy Power and William W. Hala, November, 11.

Proctology—A Treatise on the Malformations, Injuries and Diseases of the Rectum, Anus and Pelvic Colon—Frank C. Yeomans, October, 11.

Public Health and Hygiene, in Contributions by Eminent Authorities—William Hallock Park, October, 16.

Road to Health—C. E. A. Winslow, December, 11.

Roentgenology—G. W. C. Kaye, July, 11.

Serious Symptoms in Chronic Heart Disease—Harrington Bennett Munroe, September, 11.

Serum Diagnosis by Complement Fixation, with Special Reference to Syphilis—John A. Kolmer, October, 11.

Spinal Anesthesia (Subarachnoid Radicular Conduction Block), Principles and Technique—Charles H. Evans, July, 11.

Surgical Pathology—William Boyd, October, 11.

Textbook of Clinical Neurology for Students and Practitioners—M. Neustaedter, September, 12.

The Climacteric (the Critical Age)—Gregorio Maranon, August, 11.

The Clinical Aspects of Venous Pressure—J. A. E. Eyser, November, 11.

The Conquest of Cancer by Radium and Other Methods—Daniel Thomas Quigley, September, 12.

The Diagnosis and Treatment of Tropical Diseases—Edward Rhodes Stitt, August, 11.

The History of Hemostasis—Samuel Clark Harvey, October, 11.

The Injection Treatment of Hemorrhoids—Charles Conrad Miller, August, 11.

The Neuroses—Israel S. Wechsler—September, 14.

The Newborn Infant—Emerson L. Stone, September, 11.

The New Pocket Medical Formulary—William E. Fitch, September, 14.

The Normal and Pathological Physiology of Bone—Its Problems—R. Le Riche, A. Policard, Sherwood Moore and J. Albert Key, November, 12.

The Tonsils and Adenoids and Their Diseases: Including the Part They Play in the Systemic Diseases, Irwin Moore, November, 14.

The Writing of Medical Papers—Maud H. Mellish-Wilson, September, 11.

The Vertebrae Roentgenologically Considered—Ariel Wellington George and Ralph Davis Leonard, August, 12.

Thyroxine—Edward C. Kendal, July, 11.

Tuberculosis and How to Combat It; a book for the Patient—Francis M. Pottenger, August, 11.

Tumors Arising from the Blood Vessels of the Brain, Angiomatous Malformations and Hemangioblastomas—Harvey Cushing and Percival Bailey, November, 11.

Urology—Edward L. Keyes, October, 12.

Varicose Veins, With Special Reference to the Injection Treatment—H. O. McPheeters, December, 11.

What Everyone Ought to Know—Oliver T. Osborne, December, 11.

What Everyone Should Know About Eyes—F. Park Lewis, July, 12.

What You Should Know About Heart Disease—Harold E. B. Pardee, October, 11.

Youthful Old Age, How to Keep Young—Walter M. Gallichan, September, 11.

XIII. INDEX TO REPORT OF BOARD OF MEDICAL EXAMINERS

(Index to News Items, Vol. 31, July to
December, 1929)

Abortions, Alleged:

- Afaya, Frederico, p. 303.
- Berg, Arthur O., D. C., p. 79.
- Boido, Rose, M. D., p. 230.
- Caron, Marie (Midwife), p. 230.
- Darrow, George W., M. D., p. 231, 303, 448.
- Long, William A., M. D., p. 230.
- Manning, Mrs. M. M., p. 80.
- Tapley, Fred B., p. 376.
- Traxler, Paul, p. 230.
- Acme X-Ray Laboratories, p. 376.
- Afaya, Frederico, p. 303.
- Appellate Court Decision—Machado, M., D. C., p. 232.
- Araki, M., p. 79.
- Asia Coast Corporation (See Higashi), p. 230.
- Atkinson, Archibald A., M. D. (Narcotic), p. 230.
- Bailey, Madame E., p. 376.
- Baker, Norman, M. D., p. 230.
- Barron, Albert Carl, p. 229-230.
- Bartel, J. E., M. D., p. 376.
- Battle Creek Hospital, Ltd., p. 376.
- Berg, Arthur O., D. C., p. 79.
- Berkeley Chiropractic College, p. 303.
- Bills Affecting Medical Practice Act, p. 159.
- Board of Medical Examiners—Reelect Officers, p. 448.
- Boido, Rose G., M. D., p. 230.
- Bong, Lai Tai, p. 230.
- Bonner, W. Leighton, p. 230.
- Bouk, Anna, D. C., p. 231.
- Buffum, Roy L., M. D., p. 230-231.
- Buhler, George A., p. 231.
- Bullfinch, Dr. Henry M., p. 232.
- Button, Annabel, p. 376.
- Cain, R. A., D. C., p. 448.
- Cale, Charles A., p. 231, 303.
- California Chiropractic Association, sued by Humason, p. 376.
- Camp, Calvin, M. D., Prison Sentence, p. 79.
- Cancer Violators:
 - Hoque, William F., p. 80.
- Caron, Marie (Midwife revoked), p. 230.
- Cary, Beatrice, p. 303.
- Certificates:
 - Restored—
 - Baker, Norman, M. D., p. 230.
 - Coleman, Stuart, M. D., p. 230.
 - Newcomb, Ralph, M. D., p. 448.
 - Revoked—
 - Caron, Marie, Midwife, p. 230.
 - Greig, Thomas O., M. D., p. 448.
 - Kirkwood, Robert, M. D., p. 448.
 - Smith, Moses Edwin, M. D., p. 230.
 - Tapley, Fred B., M. D. (Appeal), p. 230.
 - Traxler, Paul, p. 448.
 - Wrenn, Joseph T., M. D., p. 230.
- Chan, Dr.—See Sai Sang.
- Chan, Y. L., p. 231.
- Cheatham, Samuel A., p. 303.
- Check "Artists":
 - Bonner, W. Leighton, p. 230.
 - Bullfinch, Henry M., p. 232.
 - Cain, R. A., p. 448.
 - Manella, William, p. 232.
 - Stewart, H. M., p. 232.
- Chinese Herbalists:
 - Dr. Chan (See Sai Sang).
 - Lai Tai Bong, p. 230.
 - Sai Sang, p. 232.
 - Y. L. Chan, p. 231.
- Chiropractic Initiative, p. 232.
- Licenses active, p. 448.
- Chiropractic Schools:
 - See Berkeley Chiropractic.
 - See Cale.
 - See Golden Gate C. C. & S. of P.
- Chiropractor—Appellate Court Decision re Limitation, p. 231.
- Chiropractor Violators:
 - Abortion—Berg, Arthur O., D. C., p. 79.
 - Bouk, Anna, p. 231.
 - Cain, R. A., p. 448.
 - Cale, Charles A., D. C., Alleged Diploma Mills, p. 231, 303.
 - Cowle, J. C., D. C., Practice without license, p. 231.
 - Howe, Gertrude, D. C., Guilty Vagrancy, p. 80.
 - Kissell, Corinne, D. C., Guilty Vagrancy, p. 80.
 - Machado, Manuel, D. C., p. 231, 232.
 - Miller, Marjorie, D. C., Guilty Vagrancy, p. 80.
- Chirothesian:
 - See Button, Annabel.
 - See Heffner, J. Q.

- Citations (See Hearings), p. 79.
- Citron, I. Jesse, M. D., p. 231.
- Coleman, Stuart, M. D., p. 230.
- College of Cinesitherapy Manipulation, p. 376.
- Collins, James, Director Department Professional and Vocational Standards, p. 303.
- Colorado—College of Cinesitherapy Manipulations, p. 376.
- Conway, J. P., p. 231.
- Court Actions—Writ of Review, p. 376.
 - See Humason (sues Chiropractic Association).
 - See Tapley, Fred.
 - See Traxler, Paul.
- Court Decisions—Machado M., D. C., re malpractice, p. 231.
- Cowle, J. C., D. C., p. 80, p. 231.
- Darrow, George W., M. D., p. 231, 303, p. 448.
- De Moss, George Olem, p. 231, 304.
- Department of Professional and Vocational Standards, p. 303.
- de Zita—see d'Orgler, p. 303.
- d'Orgler, alias de Zita, p. 303.
- Diploma—Bogus, U. of Ill., See Diploma Mills.
- Diploma Mills:
 - Barron, Albert Carl, p. 229.
 - Cale, Charles A., p. 231.
 - Crane, Jacob, p. 229.
 - Gonzales, Democrito, p. 448.
 - Higashi, K., p. 230.
 - Illinois, p. 304.
 - Kalmus, J. Morris, p. 232.
 - Meadows, Rush, p. 230.
- Dominguez, Armando, p. 304, 376.
- Drugless Varieties:
 - See College of Cinesitherapy—Manipulation.
- Eyesight Swindlers:
 - See McBride, William.
- Feldheiser, Bertha, p. 231.
- Fonceca, Emily, p. 304.
- Fowler, William S., M. D., p. 230.
- Frauds in Illinois licenses, p. 80, 230, 304.
- Golden Gate Chiropractic College and School of Physiotherapy, p. 303.
- Gonzales, Democrito, fraudulent credentials, p. 448.
- Goodenow, Norman H., M. D., p. 230.
- Gormley, Harry H., M. D., p. 232, 376.
- Grace Darling Hospital Association sued, p. 303.
- Graham, Herbert, M. D., p. 232.
- Gregg, Wendell O., M. D., p. 230.
- Greig, Thomas O., M. D., p. 304.
 - Revoked, p. 448.
- Hearings:
 - Atkinson, Archibald A., p. 230.
 - Buffum, Roy L., M. D., p. 79.
 - Caron, Marie (Midwife), p. 230.
 - Goodenow, Norman H., M. D., p. 79.
 - Greig, Thomas O., M. D., p. 448.
 - Kelley, Gilbert A., M. D., p. 448.
 - Kirkwood, Robert C., M. D., p. 79.
 - LaBerge, George H., M. D., p. 230.
 - Lanternman, Roy S., M. D., p. 79.
 - Moore, Wilson McKenery, M. D., p. 79.
 - Pulsifer, Leonard M., M. D., p. 79.
 - Rinaldo, Eugene, M. D., p. 230.
 - Smith, Moses Edwin, M. D., p. 79.
 - Swayze, Ormiston, M. D., p. 79.
 - Tapley, Fred B., M. D., p. 79.
 - Traxler, Paul, M. D., p. 79.
 - Ward, Irving, L., M. D., p. 79.
 - Wrenn, Joseph T., M. D., p. 79.
 - Heffner, J. Q., p. 304.
 - Higashi, K., see Diploma Mills, p. 230, 304, 448.
 - Hoque, William F., p. 80.
 - Hospital Associations Sued, p. 303.
 - Hospital Survey re Narcotics, p. 448.
 - Howard, R. J., p. 448.
 - Howe, Gertrude, D. C., p. 80.
 - Humason, Bert H., p. 376.
 - Iheda, Y., p. 448.
 - Illinois:
 - Diploma Mills and Bogus Licenses, p. 229, 304.
 - Illinois License Scandal, p. 304.
 - International Hospital Association sued, p. 303.
 - Interne Certificates (forged in Illinois), p. 229.
 - Japanese Violators:
 - Araki, M., p. 79.
 - Higashi, K., p. 230, 304, 448.
 - Iheda, Y., 448.
 - Kushiyama, T., p. 80.
 - Takahashi, Heido, p. 80.
 - Takeda, G., p. 303.
 - Jaqua, Frank B., p. 227.
 - Johnson, George D., p. 80, p. 232.
 - Kalmus, J. Morris, p. 232.
 - Kammeyer, Erich M., p. 232.
 - Kelley, Gilbert A., M. D., p. 448.
 - Kissell, Corinne, D. C., p. 80.

- Kirkwood, Robert C., p. 448.
- Kushiyama, T., p. 80.
- Kvello, Olaf, M. D., p. 232.
- LaBerge, George H., M. D., p. 230.
- Lai Tai Bong, p. 230.
- Lang, William A., M. D., p. 232.
- Lanternman, Roy S., p. 230, 448.
- Legislation:
 - Medical Act Amendments, p. 78.
 - Miscellaneous, p. 159.
 - Libel—See Humason.
- Liberty Hospital Association sued, p. 303.
- Licenses (Spurious, sold in Illinois), p. 229, 304.
- Long, Samuel C., M. D., p. 230.
- Machado, Manuel, D. C., p. 231, 232.
 - Appellate Court sustains conviction, p. 232.
- Manella, William P., 232.
- Manning, Mrs. M. H., p. 80.
- McBride, William, p. 376.
- McCarthy, James A., p. 80.
- McDonald, Donald, p. 80.
- Meadows, Rush, p. 227-230, p. 303.
- Medical Examiners re-elect Officers, p. 448.
- Medical Licenses sold in Illinois, p. 229, p. 303.
- Mexico requires citizenship, p. 448.
- Miller, Marjorie, D. C., p. 80.
- Miller, Orlando E., p. 448.
- Molony, William R., M. D., re-elected, p. 448.
- Moore, Wilson McKenery, M. D., 230.
- Morgan, Harry, Secretary Department Professional and Vocational Standards, p. 303.
- Murder—See Abortions.
- Second degree—Berg, Arthur O., D. C., p. 79.
- Thompson, Robert, p. 304.
- Westlake, Frank P., p. 79.
- Narcotics:
 - Compromise settlement of violations now outlawed, p. 80.
 - Survey of Hospitals, p. 448.
- Violators:
 - Atkinson, Archibald A., M. D., p. 230.
 - Buffum, Roy L., M. D., p. 230, 231.
 - Citron, I. Jesse, M. D., p. 231.
 - Coleman, Stuart M., M. D., p. 230.
 - Goodenow, Norman H., M. D., p. 230.
 - Gormley, H. H., p. 232, 376.
 - Graham, Herbert, M. D., p. 232.
 - Moore, Wilson McKenery, M. D., p. 230.
 - Newton, John C., M. D., p. 448.
 - Pulsifer, Leonard M., M. D., p. 230.
 - Smith, Moses E., M. D., p. 80, 230.
- National Board Amendment, p. 79.
- Nevada License by Fraud (Cheatham), p. 303.
- Newcomb, Ralph, p. 448.
- Newton, John C., p. 448.
- Northwestern Medical College, p. 229.
- Optometrist (violators of Medical Practice Act), p. 232.
- Parker, Farrar B., p. 304.
- Phillips, Percy T., M. D., re-elected, p. 448.
- Pinkham, Charles B., M. D., re-elected, p. 448.
- Poras, Florentine, p. 232.
- Progressive Chiropractic Association—Proposed Initiative, p. 232.
- Pulsifer, Leonard M., M. D., p. 230.
- Purviance, Percy, D. C., p. 303.
- Richards, Melvin, witness disappeared, p. 231.
- Rinaldo, Eugene, p. 230.
- Rush Medical College (alleged bogus diplomas of), p. 229.
- Sai Sang, alias Dr. Chan, p. 232.
- Salis, Elida, p. 304.
- Seibert, William P., p. 232.
- Smith, Moses Edwin, M. D., p. 80, p. 230.
- Stewart, H. M., p. 232.
- Sun Ray Operators:
 - Iheda, p. 448.
- Swayze, Ormiston, M. D., p. 230.
- Takahashi, Heido, p. 80.
- Takeda, S., p. 303.
- Tapley, Fred B., p. 230, 376.
- Taylor, James Hayes, p. 448.
- Thompson, Robert, alias Dr. Grant, p. 304.
- Traxler, Paul, M. D., p. 230.
- University of Illinois, bogus diplomas—See Higashi, p. 230.
- University of Wisconsin—Forged diplomas, p. 229.
- Ward, Irving L., M. D., p. 230.
- Westlake, Frank P., M. D., p. 79, p. 304.
- Wheeler, Clayton E., M. D., p. 79.
- Wrenn, Joseph T., M. D., p. 79, p. 230.

CALIFORNIA AND WESTERN MEDICINE

VOLUME XXXI

JULY, 1929

No. 1

FUNCTIONAL DISORDERS*

By J. H. MUSSER, M. D.

New Orleans, Louisiana

THAT disorders of function of some of the organs of the body are extremely common is the experience of all physicians, whether engaged in general practice or in one or another of the specialties. Deviation from the normal, without pathologic change, is seen in all types of patients from the out-and-out psychoneurotic to the husky young athlete who may be able to run a half mile under two minutes or play an hour of strenuous football but yet who may have the symptoms associated with hyperacidity. Freedom from the usual ailments of mankind, a strong constitution, and a vigorous personality superficially may seem to be barriers to the many complaints to which man is heir, but this is not the case. Such an individual may have violated many of the rules of personal hygiene, which may for a time be neglected with impunity, but sooner or later he will suffer and pay the penalty for his indiscretions. On the other hand, there are innumerable people, constitutionally substandard, who go through life suffering from many and varied complaints, who are not the victims of organic disease, and whose whole life is a burden to themselves and often, in truth, a continuous source of worry and irritation to their medical attendant. These psychoneurotics and neurasthenics are so demanding, their complaints so polymorphic and their handling so difficult, that they are frequently the bane of the physician's life; yet tact, sympathy, and firmness in dealing with them often repays the medical man manifold. Their symptoms to them are very real; they actually suffer though organically sound, and when they are helped, aided, and assisted through periods of undue stress and strain, as they can be, their gratitude is unbounded and their reaction is to do something in return for what has been done for them. Many a young doctor has gotten his first real start in medicine by his assiduous care of a neurotic who has been grateful to him and has preached his virtues from the housetops. Many a successful practitioner, who perchance knows little of the science but much of the art of medicine, has succeeded because of his inherent, intuitive and often unconscious ability to guide these people.

In the numerous discussions that have taken place in the past few years anent the future of

the general practitioner, the fact that he knows well the psychical make-up of his patients is often forgotten. This is a factor which should not be overlooked in discussing what is to become of this invaluable and irreplaceable member of the profession. I doubt very much if specialists, or group practice, or large clinics will ever replace the man who comes into intimate personal contact with the individual patient. He does not lose sight of the patient and consider only the disease. On the contrary, if he errs, it is to err in the other direction; to hold impossible or improbable the development of serious organic disease in one whom he has seen grow up from childhood. On the other hand, in group practice there is entirely too great a tendency to pass the patient from man to man and, in seeking out possible disease, to overlook the psychologic make-up of the patient. But this is to be said in favor of the diagnostic survey performed by a group of qualified specialists: the diagnosis of many psychic disorders, often manifest largely through somatic response is fraught with difficulty; organic disease may be excluded only through the employment of the various physical and laboratory procedures which are available to detect diseases; only when true visceral disease is proved not to be present, may the ultimate diagnosis be reached by a process of exclusion. Diagnosis by exclusion is not the ideal method of determining the type of disease, but it is the only method that should be employed in order accurately to recognize psychogenetic disorders.

TYPES OF FUNCTIONAL DISORDERS

I propose to discuss the functional disorders under two main headings: (a) those that occur in the constitutionally sound individual and (b) those that appear in the constitutionally substandard. A third great group of patients present themselves to the physician who might be added to this list. I refer to those afflicted with physical disease who suffer from a variety of complaints related more or less closely to the original and primary disorder. Such complaints vary from those directly dependent upon the organic lesion, exemplified by the cough in the young man with rheumatic heart disease with mitral stenosis, to the frank out-and-out psychoses, the dreams and hallucinations that are observed in patients with severe cardiac insufficiency. Innumerable examples of toxic or exhaustion psychoses, of dysfunctions due secondarily to an actual lesion remote from the original focus, might be enumerated. The discussion of this problem well warrants sufficient thought and cogitation to lead to an essay

* From the Department of Medicine, Tulane University of Louisiana School of Medicine, New Orleans.

* Read before the California Medical Association in General Meeting at the Fifty-Eighth Annual Session, May 6-9, 1929.

devoted to it alone, and by better pens than mine has the psychology of the sick been elaborated.

FUNCTIONAL DISORDERS IN THE CONSTITUTIONALLY FIT

The border line between the normal and the subnormal is an extremely delicate filament which may be broken down upon the slightest provocation. Individuals may be considered standard on one occasion; upon another might be accurately grouped among the substandard. A normal individual, basing the question of normalcy upon the basis of certain standards, under still different standards might be considered below the normal psychically and physically. There is no hard and fixed rule which can be followed in judging the average individual. Opinions as to the norm vary as much as do the colors of the feathers of tropical birds of the air. For this reason one is tempted to list as normal only those that have a psychic background well above the general run of the population. Such individuals do not suffer from the diarrhea of fear nor the constipation of worry. They are free from the psychogenic disorders of the average man, but hot pastries may cause them gastric discomfort.

The functional disorders manifest themselves by far the most frequently in digestive upsets; so frequently indeed that large sections of textbooks on medicine and larger sections in books on gastro-enterology are devoted to the so-called gastric and intestinal neuroses. Parenthetically the term "gastric neurosis" is gradually disappearing from medical terminology. More properly "functional disorder" is the appellation nowadays most frequently used. The condition is not necessarily dependent upon a neurosis, but actually is a disturbance of the function of the organ dependent upon a variety of causes.

Functional gastric disorders are extremely common, are protean in their expression, and are usually dependent upon disturbance of motility of the organ. They are prone to occur as a result of dietetic indiscretion, and may occur in king or pauper. Age, sex, race, are etiologic factors of minor importance in the constitutionally sound. Frequently repeated gastrogenic attacks are likely to be followed by, or result in the development of chronic dyspepsia. The dyspeptic is ever with us. Gradually as a result of this more or less persistent indigestion, there is a steady weakening and wearing down of the psychic reserve and the patient may ultimately develop symptoms which are largely neurogenic in origin. The etiologic factors responsible for functional gastric disorders are errors in eating; the unwise selection of the diet is a primary factor, but of secondary importance, only slightly less than this, are the habits of eating, the bolting of the food, the drinking of too much liquid with the meals, the failure to rest physically after meals. Failure to observe the simple, plain rules of gastric hygiene results in a series of disorders which can be obviated by common sense for the most part, though ignorance of the elements of physiology plays some part. These patients are ex-

tremely satisfactory to treat if they are at all coöperative, as they usually are. A comparatively few simple directions need be given: short setting-up exercises in the morning, followed by a cold sponge or shower, a diet list of good substantial plain food, regular hours of eating and sleeping, and directions for proper eating. These simple directions are often more potent than the prescription for *nux vomica* and soda in effecting a cure. Printed directions are always followed more carefully than word of mouth advice. The difference between a specialist and a general practitioner is that the one hands out printed rules to be followed, whereas the other advises exactly the same thing, but, lacking the magic potency of a printed slip of paper, fails to impress the importance and value of what he has said upon the patient.

The realm of functional disorders of the intestine is a broad and comprehensive field of clinical investigation. The problem presented is to determine whether the complaint is organic or is without pathologic causation. In the great majority of patients no one thing can be found of organic nature to explain the chronic constipation nor the occasional diarrhea. Just as with the stomach, so with the intestines, the motor function is most frequently disturbed. This may vary from a mere sluggishness of action, the result of faulty habits, to an out-and-out definitely visualized (roentgenologically) spastic colon, which spasm is not dependent upon disease, but upon an imbalance of the autonomic nervous system in which the sympathetic-vagus relationships are disturbed. Whether or not this is dependent in turn upon endocrine dysfunction, the fact remains that functional intestinal disorders are extremely common. Constipation is often the chief complaint of sufferers from a variety of troubles; but just what is constipation? There is no comprehensive definition of the word nor unanimity of opinion as to what constitutes normal bowel action. For years a fetish has been made of daily, every twenty-four hour, passage of the intestinal contents as a *sine qua non* to good health, yet every practitioner knows persons who are big and strong, well and husky, to whom such a happening rarely occurs and who go seventy-two hours or longer without an evacuation and without any subjective disturbances. If definite statistics could be obtained, perhaps it would be found that more bowel neurasthenics have been developed as a result of physiologic misinformation than have sufferers from so-called chronic constipation been made ill by their presumed abnormality.

The heart frequently manifests abnormalities which may or may not be purely functional, but which, with the present limits of diagnosis, cannot be proved to be organic. Many individuals may become short of breath on comparatively slight exertion, or feel their heart beat too rapidly, who have not heart disease, nor do they have disease elsewhere to explain the condition. A disorder of the nervous mechanism that controls the heart is the true explanation. The fear of cardiac

disease is ever present in the minds of the laity whenever abnormal sensations are experienced in the region of the precordium. They know of the large number of deaths that occur yearly in this country as a result of heart disease; they are acquainted with the occasional sudden death so frequently ascribed to heart failure; they are cognizant of the importance of the heart in maintaining life; and they are ignorant of anatomy and physiology. The nonmedical individual consequently attributes to the heart peculiar precordial sensations irrespective of their origin, be they due to excessive air in the stomach, esophageal spasm, intercostal neuralgia, or what not. Furthermore physicians are often responsible for the development of a cardiac neurosis. Most doctors know that a soft blowing systolic murmur at the apex of the heart is not indicative of heart disease, yet they let a patient know that he has a heart murmur, and thereafter that patient will point with pride to the fact that he has a diseased heart. Certain cardiac irregularities occasion subjective symptoms which are really not of sufficient importance nor productive of enough discomfort to warrant medical care; yet such is the fear of heart disease that invariably the victim of such a syndrome will consult a physician. Ectopic beats or extra systoles do at times cause disagreeable and uncomfortable sensations sufficient to disturb the patient. Granting that in the majority of cases these abnormal beats are indicative of cardiac disease, a goodly number remain which are dependent upon faulty nervous control, possibly the result of the overuse of tobacco and frequently the manifestation of the inhibition of excess of caffeine, be it coffee, tea, or coca-cola. The individual with functional cardiac disorders is, like the man with digestive complaints, usually easy to treat provided the fear of heart disease has not become a fixed phobia. A careful reassuring study to exclude organic heart disease and then a full and frank discussion of the mechanism of production of the symptoms is generally sufficient to relieve the patient's mind. Mere words will not always cure the condition, but carminatives, belladonna, or, in the case of the provoking and irksome dropped beats, moderate doses of quinidin will help materially in allaying the symptoms. The dictum that functional disorders of the heart may lead to organic disease is as true with this organ as with the stomach. Long-continued abuse of the stomach may lead to gastric atony; the heart overstimulated by thyroxin may ultimately become the goiter heart.

Functional disorders of the other viscera are relatively rare. At times nervous tachypnea is observed, but rarely does it occur in the normal individual. Transient polyuria is occasionally seen, while frequency of micturition may persist for a few days following a psychic shock, but again the chances are that, when it does, a substandard individual is the one affected. This latter generalization applies also to functional paralyses of speech, to loss of smell and taste, to eye disturbances, to hysterical sensory manifestations. When they occur it is very generally assumed

that the person so involved is one with a lack of psychic balance.

FUNCTIONAL DISORDERS IN THE CONSTITUTIONALLY SUBSTANDARD

The realization and the appreciation of the tremendous number of the general population who are psychically below the accepted standards has come about largely as a result of the Great War. Thousands of men broke down before they had ever heard the sound of a gun, while the number of men who suffered from shell shock might be estimated in units of tens of thousands rather than in thousands, were the figures based upon a consideration of the very much greater number who had none of the outstanding evidences of the disorder yet who came home with a damaged psyche, rather than upon the number actually hospitalized. Furthermore it is doubtful if any standard can be fixed as to the psychic response of a given individual to an emotional disturbance of greater or less intensity. The apparently emotionally unstable soldier, according to peacetime standards, would go through the agonies of war grossly, at least, unchanged while his placid, bovine-like platoon mate, to all intents and purposes normal, broke down early on slight provocation. Perhaps there is no normal. As Woodyatt † so pungently puts it: "All men, normal or sick, have emotions and emotional conflicts, and all are affected physically by them." Be that as it may, all medical men have certain ideas about who is or is not a psychoneurotic or a neurasthenic, and it is on this group, those who present definite neurotic stigmata, I would dwell for a few moments.

The etiologic background for this group is of interest. They are born, not made neurasthenics. The lack of emotional control is inherent in them, but extraneous factors are responsible for their manifestations of disease, of functional disorders, of pains and aches, of abnormal sensations, and of what not. These extraneous factors, or perhaps environmental stimuli are numerous. They include grief, worry, sexual repression, domestic trials, marital troubles, social maladjustment, severe, sudden or unaccustomed mental shock. If the psychically unstable could live the placid, peaceful parasitic life of an ameba they would never suffer the inevitable breakdown, but unfortunately such is not the case. They must come in contact with the outside world, and society expects them to carry the usual duties and obligations of their social stratum.

Of these several factors enumerated above which may be the stimulus necessary to produce psychic abnormalities, the sexual, whether it be sexual perversion or repressions, stands first in the opinion of neuropsychiatrists. That such would not be the opinion of the great majority of physicians I am quite sure, unless they be influenced by the enormously fecund literature of the Freudian school. If the conflict between the ego and sexual instinct "is of such a character

† Woodyatt, R. T.: *Psychic and Emotional Factors in General Diagnosis and Treatment*, Jour. Am. Med. Assn., 89:1013, 1927.

that repression takes place, then the energy underlying the instinct is, so to speak, dammed back beyond the control of consciousness, where it may begin a career of unconscious self-expression" (Ramsay Hunt). This statement certainly does not apply to the great majority of the neurasthenic patients seen by the average practitioner. Much more potent than sex in producing subjective phenomena are the minor factors of jealousy, selfishness, marital unhappiness, a spoiled child, overwork, business reverses, monotony of life, or even a poor cook. These environmental influences undoubtedly seem to play a more important part in producing psychic disturbances in the average office patient than do the primitive instincts of reproduction and preservation. As distinguished a neurologist as Ramsay Hunt says that in dealing with problems of the mind, of the functional type, the environmental factors are of equal if not greater importance than constitutional factors. This statement may be true, but the environmental influences certainly affect but little the psychically sound.

THE MANIFESTATIONS OF FUNCTIONAL DISORDERS IN THE SUBSTANDARD

The expression of functional nervous disease is so varied, so manifold in its manifestations that it is an utter impossibility to catalogue it in all its ramifications. Consider the patient with loss of sensation in the right arm not limited to any special sensory nerve area or the unwounded ex-soldier who ten years after war still has a persistent limp, or the woman who cannot taste or smell after a marital explosion, or the girl with a globus hystericus, or those afflicted with the astasia-abasia complex, or hystero-epileptiform convulsions, or hysterical spasms and contractures, or hallucinations and even delirium, and you touch only the surface of the hysterical disorders. These fortunately are relatively rare and usually fall into the field of the psychiatrist. The internists or the specialists in other branches rarely see these patients and when they do, refer them to those who see many of these cases, have studied them and their behavior, and are, consequently, well qualified to undertake their management.

To the medical man, however, come, in ever increasing number, those unable to stand the stress of modern civilization but who manifest this lack of coördination with their environment and surroundings by relatively minor outbreaks. As with functional disorders in the constitutionally sound, so in the inheritor of an unstable nervous system, the gastro-intestinal and cardiac syndromes are most likely to predominate. The series of subjective, and often objective, phenomena of which these patients complain are much more exaggerated, much more intense and much more likely to occur on slight stimulation than in the normal individual. A bad taste or loss of taste, dryness of the mouth, loss of appetite, a desire for unusual articles of diet are frequent expressions of a psychogenic upset at the beginning of the alimentary tract. Progressing down this system spasm of the esophagus is very frequently a result of a vagal dysfunction which may manifest itself

in a number of different ways in the patient. Abnormalities of the motor function, the secretory and sensory functions of the stomach are very common indeed. It is quite possible to have an involvement of one or the other of these several functions, but usually it occurs as a combination of all. The duodenum is likewise affected and, while it is quite possible that the upper intestinal tract may suffer from certain functional derangements, they are difficult to determine and hard to elucidate. The lower alimentary tract, however, is the frequent seat of functional disorders which, as with the stomach, may be secretory, sensory or motor, but which are usually in the latter group. Cecal spasm and colonic spasm and rectal spasm are productive of pain, discomfort, constipation, and other symptoms often out of all proportion to the lesion demonstrable by the roentgen ray.

One of the common manifestations of a disturbed psyche observed during the war, is characterized by marked muscular asthenia, rapid heart, an extremely labile blood pressure, paroxysmal nocturnal dyspnea, and many nervous complaints, using the term "nervous," however, to indicate rather transient, evanescent subjective sensations which are extremely fugacious in other patients but which in these soldiers persisted over a long period of time. They had corneal anesthesia, absence of the gag reflex, pronounced vasomotor phenomena, as well as a tachycardia, exaggeration of the tendon reflexes and muscular asthenia without neuromuscular causes. Considerable attention was paid to this syndrome during the war, and on the return of the medical officers to civil life they found that it was a syndrome quite common in everyday life, occurring in both sexes. In addition to this, the constitutionally substandard individual is frequently prone to have a tachycardia, attacks of palpitation, to suffer from paroxysmal tachycardia, to have ectopic beats, all of which are a prolific source of mental worry to the subject. Likewise, the neurasthenic, having a very low pain threshold, frequently suffers from pain sensations in the thorax which he ascribes to his heart. These sensations, of course, are not produced by disease of the organ, but it is often very hard to convince the neurasthenic that such is the case. Secretory phenomena are observed in these patients with marked frequency and often they are suggestive of endocrine disorder.

The glands of internal secretion may be affected and functional disorders arise as a result of severe emotional shock. One of the most pronounced and severe cases of exophthalmic goiter I have ever seen appeared twenty-four hours after news had been brought to a young woman that her husband had been suddenly killed. Individuals with diabetes are often profoundly affected by psychic trauma. It is quite possible that the chromaffin system is disturbed frequently.

Other systems or viscera of the body may be involved, without suggesting organic disease of the viscera. Headache, pressure on the head or in the head, constriction around the head, vertical pain, are seen when there is no increase of intra-

cranial tension. Pains and aches all over the body and neuralgiform-like attacks occur. Sexual neurasthenics, particularly young males, are legion. Young women are often conscious of abnormal sensations in their breasts or in the region of the ovaries. It would be possible to continue indefinitely enumerating the various manifestations of neurasthenia, psychasthenia or hypochondriasis.

Treatment of the milder forms of these psychogenic disorders is a satisfactory and absorbing problem. If the physician will only take time to analyze the everyday life of such a patient, the irritating factor can often be discerned and discovered and, while it is often not possible to do away with it, methods may at least be suggested which will mitigate the frequency and the severity of the stimuli. When this is done the general rules of hygiene should be laid down and the patient should be given plenty of both mental and physical rest. In the obstinate and exaggerated cases a thorough Weir-Mitchell rest cure may be indicated, but in the milder forms daily rest in the middle of the day will often suffice. Other rules of hygiene as suggested in the treatment of the constitutionally strong should be employed. In these more severe forms where the patient is constitutionally substandard, tact, thoughtfulness and kindness will do much to aid the patient. The discerning physician often becomes the safety valve for emotional outlet. The mere recital of the trouble and the confiding in one who has sympathy acts as a stabilizer, for a time at least, to the individual who is suppressing or repressing certain emotions. The physician can do much for these people. That he can do more than he is now doing is shown by the host who flock under the protecting wing of every cult that offers a shelter. I would plead for these individuals that they be treated as friends and fellows and that they be considered as sick, as ill, and as diseased as he who has a true organic disease.

1551 Canal Street.

THE BACTERIOPHAGE AS A THERAPEUTIC AGENT*

By E. W. SCHULTZ, M. D.
Palo Alto

INTRODUCTION

SCARCELY more than a decade has elapsed since d'Herelle¹ published his first observations on the strange phenomenon which we have come to associate with his name. Something like a thousand scientific papers now point to the interest which his discovery has commanded. D'Herelle's basic observations have been repeatedly confirmed and considerably extended. Indeed, present-day knowledge of the extent of the phenomenon among bacteria of all sorts, pathogenic and nonpathogenic, cannot help causing one to wonder why a phenomenon so striking in its manifestations, and of such general occurrence managed to escape detection so completely during

a half-century of active bacteriological investigation. While many of the studies have centered around the interesting question of the nature of the agent responsible for the phenomenon of transmissible bacterial lysis, as well as around other questions of more academic interest, some investigations have dealt with the possible application of the bacteriophage to the prevention and treatment of infectious diseases. Naturally a substance which even in minute quantities is capable of killing and dissolving bacteria in cultures, and which at the same time is known to be entirely harmless to animal tissues, deserves investigation as a potential therapeutic agent. That the hopes which prompted the inquiries in this direction have not been altogether unfounded, may be gathered from the general trend of some forty reports now in the literature. Time does not permit me to review these in detail. I shall only be able to indicate the general trend of these results and point out the conditions which unfortunately tend to limit the application of this form of therapy.

REVIEW OF 'PHAGE THERAPY

D'Herelle^{2,3} was apparently the first to apply the bacteriophage therapeutically. He administered it to seven cases of *Shiga dysentery*, and noted prompt recoveries in all of the cases treated. Da Costa Cruz⁴ in South America claims to have supplied more than ten thousand ampoules of 'phage to physicians and hospitals in Brazil, where, I understand, this form of therapy is now routinely employed in the treatment of bacillary dysentery. According to da Costa Cruz, the results of 'phage therapy have been uniformly good. A potent 'phage is said to bring the bloody stools to a stop, as a rule, within twenty-four hours, and to launch the patients upon an immediate convalescence. I have in my possession a letter received by Doctor d'Herelle from a medical officer in the Sudan to whom 'phage suspensions were supplied while I was with d'Herelle in Egypt several years ago. It reads in part as follows: "The results of treatment of bacillary dysentery with it (the bacteriophage) have been little short of miraculous. . . . In every case, with the solitary exception of a child who was practically moribund when brought to the hospital, the bacillary dysentery has cleared up within twenty-four hours." The value of the bacteriophage as a therapeutic agent in bacillary dysentery has also been confirmed by other investigators (Pereira,⁵ Spence and McKinley,⁶ Munter and Boenheim⁷). It is of interest that only two, and these are early papers, deny its therapeutic value in dysentery (Otto and Munter,⁸ Davison⁹).

Encouraging results have also been reported in *typhoid fever* by a number of investigators (Beckerich and Hauduroy,^{10,11} Philibert and Hauduroy,¹² Hauduroy and Arsimoles,¹³ Alessandrini and Doria,¹⁴ Smith,¹⁵ Richet, Azerad and Delarne¹⁶). The results obtained in typhoid, however, lack the high degree of uniformity which mark those recorded for bacillary dysentery. In the treatment of typhoid fever it appears that while some of the cases may make spectacular recoveries, others show themselves entirely

* Read before the Pathology Section of the California Medical Association at the Fifty-Eighth Annual Session, May 6-9, 1929.

uninfluenced. This at least has been the experience of most of those who have reported on a number of cases. Only one report (Herderschee and Wolff¹⁷) has appeared in which the results have been entirely negative.

Favorable results have also been recorded by a considerable number of investigators who have tried 'phage therapy in *colon infections* of the urinary tract (Courcoux, Philibert and Corday,¹⁸ Beckerich and Hauduroy,¹⁹ Alphonsi,²⁰ Arloing, Dufour, Bouvier and Sempé,²¹ Philibert,²² Lehndorff,²³ Pereira,⁵ Winans,²⁴ Frisch,²⁵ Zdandky,^{26 27 28} d'Herelle,³ Larkum,²⁹ Ravina,³⁰ Dalsace,³¹ Cowie,³² Krueger, Faber and Schultz³³). While one must be impressed by the striking manner in which some of the cases seem to have responded to this form of therapy, it is, nevertheless, true that not a few failed entirely to respond to the treatments. Here also there seem to be factors operative within the host which tend to influence greatly the results in individual cases. Whether these disturbing influences may eventually be brought under control remains to be seen.

More uniform results seem to follow 'phage therapy of *staphylococcus infections*. Bruynoghe and Maisin³⁴ as early as 1921 injected 'phage near the base of furuncles and carbuncles of six patients and noted in all of them marked improvement within forty-eight hours. Gratia^{35 36} soon after reported excellent results in something like fifty cases of staphylococcus infections, including furunculosis, carbuncles and subcutaneous abscesses. Encouraging results have also been reported following the use of staphylococcus 'phage in the treatment of sycosis (Gougerot and Peyre,^{37 38}); of staphylococcus cystitis (Nelson Barbosa³⁹); and of staphylococcus wound infections (McKinley⁴⁰). Recently Larkum,⁴¹ of the Michigan State Board of Health, has reported favorable results in sixty-five out of sixty-six cases of furunculosis. In a subsequent paper⁴² he states that the series has been extended to "three hundred cases of furunculosis, more than fifty cases of acne,* eight or ten cases of styes, and several cases of osteomyelitis." According to Larkum, the results have been "sufficiently striking to cause reputable physicians, men of years of experience in practice, men usually cautious in their reaction to therapeutic agents, in submitting their reports, to use such adjectives as 'wonderful,' 'striking,' 'remarkable.'"

This summarizes the diseases around which most of the studies on the therapeutic value of the bacteriophage have thus far centered. You will note that these reports are confined to bacillary dysentery, typhoid and paratyphoid fever, colon infections of the urinary tract and to staphylococcus infections. A few isolated ones have also appeared on its use in the treatment of certain other infectious diseases. Thus McKinley⁴⁰ claims to have realized a rapid recovery in a case of *streptococcus abscess of the lung*, treated

by the instillation of 'phage into the infected cavity. Le Louet⁴³ of Indo-China has reported rapid improvement and recoveries in water buffaloes stricken down with *hemorrhagic septicemia* (Barbone). D'Herelle⁴⁴ claims to have observed rapid recoveries in a small number of *plague* cases treated in Egypt, and more recently⁴⁵ has reported some very striking results in the treatment of *cholera* in India.

A careful examination of the literature tends to leave one in no doubt as to the potential therapeutic value of properly selected bacteriophages. At the same time it is perfectly clear that the application of this form of therapy presents certain well-defined limitations. It is to these limitations, some of which may not be altogether insurmountable, that I wish to devote most of my paper.

FACTORS WHICH TEND TO LIMIT THE APPLICATION OF 'PHAGE THERAPY

Attention has been called to the fact that in bacillary dysentery the results, when a good 'phage is employed, tend to be strikingly uniform, while those in typhoid and paratyphoid fever, in colon infections of the urinary tract and in other infections mentioned, have a tendency to be exceedingly irregular. One may observe in the latter group spectacular recoveries in part of the cases, while others in the same series remain entirely uninfluenced. The question which naturally arises in one's mind is this: Why do the results in bacillary dysentery tend to be so much more uniform than those in other infections? There are probably several reasons for this. The question may possibly be answered in part on the basis of well-established laboratory observations. It is not only known that individual races of bacteriophage may differ widely from each other in their range of action and in the intensity with which they may attack different organisms, but it is well recognized that one may observe marked differences in the uniformity with which the individual strains of given bacterial species may yield themselves to the action of one and the same 'phage. Bacteria may on this basis be divided into two general classes. In the first we find those species in which the individual strains behave in a more or less homologous manner with reference to a particular 'phage. A 'phage which, for example, happens to be active for one strain of such a species is likely to be equally active on all other strains of the species. Typical examples of such *homologous species* are *B. dysenteriae* and *B. pestis*. Were the strains of all pathogenic bacteria as uniformly susceptible as dysentery bacilli, the problem of determining the therapeutic value of the 'phage in any disease would probably be greatly simplified. From the laboratory standpoint it would then become merely a matter of supplying the clinician with a race of bacteriophage possessing marked virulence for the particular bacterial species concerned. Unfortunately, however, most of the pathogenic bacteria belong to that larger group in which the individual strains of a species often differ widely in their susceptibility to 'phage

* It is of interest that successful results have also been reported by other investigators (d'Herelle, 1928) in cases of acne treated with polyvalent staphylococcus bacteriophage, though the agent of this disease is held by some to be *B. acne*, an anaerobic diphtheroid.

action. *B. typhosus* may be cited as an example. An antityphoid 'phage, highly active on one or two strains of *B. typhosus*, may not be at all active on other strains of this species. Another antityphoid 'phage may leave these particular strains entirely untouched, and in turn lyse one or more other strains of the species. The situation which this *heterologous* behavior gives rise to in a therapeutic study of this sort becomes obvious at once.

There is another type of bacterial resistance to 'phage action which should be considered. It is the resistance which an otherwise susceptible bacterium may acquire as the result of exposure to a weakly or only moderately active 'phage. This type of resistance, which one may picture as an acquired immunity on the part of the bacterium, may be induced either *in vitro* or *in vivo*. *In vitro* one sees it in the form of secondary cultures appearing after the acme of lysis. *In vivo*, it may be acquired as the result of a spontaneous invasion of a weak or moderately active 'phage, or as the result of the therapeutic administration of a 'phage of insufficient virulence to complete the eradication of the causal organism. Resistance as the result of a spontaneous invasion of a bacteriophage is not infrequently met with in chronic *B. coli* infections of the urinary tract. Sickenga,⁴⁶ for example, found 'phages constantly present in the urine of four cases of pyelitis, and occasionally present in the urine of twelve other cases. Larkum,²⁹ who has studied this question carefully, found a 'phage present in one or more specimens of urine in about 36 per cent of the cases examined. He also noted that, whereas strains of *B. coli* isolated from the urine in acute cases are practically always susceptible to stock bacteriophages, those isolated from the urine in chronic cases are almost always resistant. Doctor Krueger, in collaboration with Doctor Faber and myself (Krueger, Faber and Schultz³³), recently made similar observations on a number of urinary cases. Krueger recovered weak to moderately active 'phages from the urines of 70 per cent of the chronic cases, in contradiction to only 8 per cent of the acute cases. Along with this he also noted a much greater incidence of 'phage-resistant organisms in the chronic cases. It does not necessarily follow, however, that all of the 'phages which naturally invade the infected urinary tract, remain of weak activity. The virulence may ascend rapidly and tend to precipitate an immediate spontaneous recovery, both from a clinical and bacteriological standpoint, as Krueger has been able to show in several cases which he followed carefully. Not infrequently, however—and this for reasons that are not clear—a balance is established between the causal microbe and the bacteriophage, and thereafter the two may coexist in the environment. In treating these particular infections the problem, therefore, becomes one of finding a 'phage of unusually marked virulence for the organism. This is not always an

easy matter, but can at times be successfully accomplished.

The bearing which these facts have on the therapeutic application of the bacteriophage cannot easily escape one's notice. An improperly chosen bacteriophage, administered therapeutically, may do no more than lead to the formation of secondary, resistant forms, for which it may in turn become much more difficult, if not impossible, to find a suitable 'phage. Not only is the possibility of gaining an immediate therapeutic result lost, but it is at the same time made more remote. One cannot, therefore, exercise too much care in choosing the bacteriophage which is to serve the therapeutic needs in a given case.

From what I have said, it must not be assumed that all that is necessary for the realization of a therapeutic result is to choose, or have chosen for you, a 'phage possessing maximum virulence for the organisms responsible for the infection. While this undoubtedly fulfills an important theoretical requirement, it is certain that not all cases respond to treatment even when this requirement is fulfilled. There are undoubtedly other factors which may at times influence the results. One of these factors may have to do with the constant variation of microorganisms in their susceptibility to 'phage action. Another may perchance have to do with the antigenic action which the bacteriophage itself is capable of exercising. Let me enlarge on this a little. It is well established (Bordet and Ciuca,⁴⁷ and others) that specific antiphagic antibodies can be easily demonstrated in blood of experimental animals having received bacteriophage suspensions parenterally over a brief period of time. Recently Sonnenschein,⁴⁸ Katsu,⁴⁹ and d'Herelle⁴⁵ have called attention to the fact that antiphagic antibodies may appear naturally in the blood of patients suffering from certain infectious diseases. If we stop to consider the frequency with which natural 'phage may be recovered, for example, from the urine of patients suffering with chronic urinary infections, we can begin to see how under certain conditions antiphagic antibodies, capable of inactivating at least certain 'phages, might be caused to make their appearance. These might conceivably neutralize the action of some stock 'phages, otherwise possessing the properties requisite for a successful therapeutic result.

There are undoubtedly still other factors which may influence individual therapeutic results. Inaccessible and sparsely scattered organisms may not be reached by the 'phage before it is itself eliminated from the body. One must remember that while the 'phage increases in concentration at the expense of bacteria which it dissolves, 'it is promptly eliminated from the body when no further organisms are within its reach, at the expense of which it may regenerate.' Marcuse⁵⁰ for this reason is inclined to attribute some of the failures in typhoid to incomplete contact between bacteriophage and organisms in the body, and he therefore recommends intravenous injection in addition to ingestion of the 'phage. On the other hand, Hauduroy⁵¹ has found that bile inter-

feres with bacteriophagy *in vitro*. It may, therefore, be possible that some of the failures in typhoid are directly referable to the inaccessibility of bacteria in the gall bladder. Analogous conditions may influence the results in other infections. The 'phage may, for example, become adsorbed to the colloidal matter of an inflammatory exudate and so thrown out of action. It may, moreover, be actually taken up by the leukocytes (Bruynoghe and Maisin⁵²). Then again, the reaction of the environment may not always be altogether suitable for bacteriophagy, a slightly alkaline medium being required. In urinary infections an acid urine must therefore undoubtedly influence the results. While there probably are still other factors which may in individual cases contribute to failure, those mentioned will probably suffice to indicate the complexity of the problem.

THE PROPER PROCEDURE IN 'PHAGE THERAPY

Despite the fact that there are factors which tend at times to restrict its successful application in the treatment of disease, we must not forget that when *properly chosen* the 'phage may prove an exceedingly helpful therapeutic agent. The proper selection of a bacteriophage for therapeutic purposes is undoubtedly of paramount importance. Such a 'phage must not only be capable of lysing the causal organisms *in vitro*, but must *possess this property to an exceptionally high degree*. Not only must the 'phage be capable of inducing complete clarification of cultures under set conditions, but it should also tend to *keep down the appearance of secondary cultures*. We must keep in mind that in employing the 'phage therapeutically we are endeavoring to effect complete sterilization of the infected region. Whenever a 'phage is employed which is of insufficient virulence to accomplish this with one sweeping stroke,* the effect is likely to be only a temporary reduction of the flora, with a subsequent ascendancy of secondary, and this time 'phage-resistant forms.

I have called your attention to the fact that individual strains of most bacterial species may differ widely in their susceptibility to bacteriophages active for bacterial species in general. For this reason it is quite impossible to say whether any particular stock 'phage actually possesses the virulence theoretically necessary for a satisfactory therapeutic experiment. *This must always be first determined by preliminary tests in the laboratory.*

Let me indicate the procedure which should properly be followed. The first step is naturally to get the causal organism out in *pure culture*. Whenever possible the material being cultured should be seeded directly on solid media. If this is not immediately possible or desirable, it should be plated out as soon as possible. Even though the plated cultures appear unmixed, one should select five or six representative colonies and transfer these to as many agar slants. Suitable young

broth cultures should then be prepared from each of these agar slants and tested against the various 'phages at one's disposal.[†] Only those tubes should be filtered for therapeutic use which show complete clarification and in which secondary cultures tend to be suppressed.

THE THERAPEUTIC ADMINISTRATION OF THE 'PHAGE

Possibly I should say a few words regarding the methods commonly employed in administering the bacteriophage therapeutically. This is a question which is frequently put to me by physicians interested in giving it a trial. In *dysentery* the practice is to administer the bacteriophage exclusively by mouth. A dose of two or three cubic centimeters of the lytic filtrate is generally given in a half glass of water. This treatment may be repeated in twenty-four hours. While there are no harmful results following the continued administration of the 'phage by mouth, nothing is gained by doing so. If a definite response does not immediately follow two or three doses of the 'phage, no therapeutic effects are likely to be realized. In *typhoid fever* the best results seem to follow a combination of oral and subcutaneous administration, two cubic centimeters being administered simultaneously by each route. Here again the treatment may be repeated in twenty-four hours, but should not be extended beyond this period. This applies particularly to the subcutaneous injections. In *colon infections of the urinary tract* the treatment generally recommended is to instil about ten cubic centimeters of the bacteriophage suspension, diluted with about five volumes of physiological saline, into the bladder, and in the event there is an associated pyelitis, introducing at the same time some of the liquid into the pelvis of the kidney. *These treatments should be preceded and accompanied by alkalization of the urine*, since an alkaline medium is essential for bacteriophagy. They should also be accompanied by two or three subcutaneous injections of undiluted bacteriophage, administered in doses of about two cubic centimeters each, given twenty-four hours apart. All other medication should be withdrawn for the time being. In *staphylococcus infections*, the practice is to give two or three subcutaneous injections of two cubic centimeters each at intervals of twenty-four hours. For carbuncles, about one cubic centimeter should be injected in small quantities of 0.1 to 0.2 cubic centimeters in the immediate region of the lesion. *Wounds*, in addition to such regional subcutaneous injection should be dressed with gauze well moistened with undiluted bacteriophage suspension.

There appear to be no contraindications to

* It is for this reason that the bacteriological as well as clinical results of 'phage therapy should be read if possible within seventy-two hours after the treatments are begun and the question of its actual sterilizing action answered.

[†] Because of the increasing number of requests which have come to us from physicians for bacteriophage suspensions, we have recently undertaken to provide a special service (Bacteriophage Research Laboratory, Stanford University, California), open to a limited number of physicians desiring to investigate the therapeutic value of the bacteriophage. Physicians may send us through their clinical laboratories pure cultures of the organisms on which they desire the so-called 'phage-susceptibility test carried out. In the event the organisms are fully lysed, we send them suitable 'phage suspensions for therapeutic trial. Physicians using this service are expected to furnish us reports on all cases treated.

the use of the bacteriophage therapeutically. No harmful effects from its use have been reported. I must, however, caution against the use of turbid suspensions. The filtrates naturally contain no preservatives. Ampoules which are not perfectly clear should be discarded.

THE THERAPEUTIC ACTION OF THE 'PHAGE

A few remarks are in order relative to the ways in which 'phage suspensions may be considered to operate as therapeutic agents. Theoretically at least, the bacteriophage exercises no direct effect on either the damaged or normal tissues of the host. Its immediate action, when it does operate effectively is comparable to the action of a specific chemotherapeutic agent, or to the action of an antitoxin acting on a toxin. In other words, its more direct action is on the agent of the disease. It probably contributes only indirectly toward whatever immunity may follow the infection. It certainly exercises no corrective influence on the anatomic conditions which may have predisposed to or followed the original infection. Cases have been reported to me in which unquestionable improvement immediately followed the administration of the 'phage, but in which the improvement was only of short duration. Instances of this type are probably most often noted in urinary infections, in which disturbing anatomic conditions exist. These anatomic conditions we have no right to expect the bacteriophage to overcome, nor have we necessarily any right to expect a durable immunity immediately following the administration of a 'phage. We must keep in mind that even though we administer a highly active bacteriophage, its residence in the body may only be temporary. It is rapidly eliminated from the body in the absence of susceptible organisms. One should moreover keep in mind that whatever transient immunity may be acquired due to the presence of the 'phage itself, this immunity is directed only toward certain specific organisms, *sometimes only against given strains of an organism*. With this we should also associate the fact that in certain infections, as for example urinary infections, the bacterial flora may at times shift to new strains and even new species. It seems to me that all these facts have an important bearing on when, in a given case, the results of 'phage therapy should be read. If we keep in mind that we expect the 'phage to act primarily as a sterilizing agent, there can be no question that the time to begin to make readings of the results is immediately after the 'phage has been given sufficient opportunity to accomplish the task at which it is set to work. The interval of time which may be allowed should probably not exceed forty-eight hours. What are the clinical conditions and the bacteriological findings at the end of this time, and what are the findings at short intervals thereafter? On this hinges the question of whether a bacteriophage actually possesses sterilizing properties. One is naturally always interested in the permanence of the results, but this is in reality not the question immediately before us. In urinary as well as other infections this

may depend in part on associated anatomic conditions; upon the opportunities for immediate reinfection; and upon the speed with which the bodily defense mechanism asserts itself. In evaluating the results of 'phage therapy, one should keep the distinction between therapeutic effect and immunizing action in mind. They are not necessarily synonymous. Immunity may be associated with or immediately follow recovery, but not invariably so, as we all know.

I have stressed the immediate lytic action of the bacteriophage as the mechanism of primary importance in freeing the tissues of invading organisms. This is seemingly, however, not the only way in which a 'phage may contribute to recovery. In certain infections the bacteriophage may come to the aid of the natural defense mechanism of the body. I refer particularly to the rôle which it may play in enhancing phagocytosis. It has been shown by a number of investigators (d'Herelle,² Weiss and Arnold,⁵³ Nelson,⁵⁴ Smith,⁵⁵ and others) that its presence greatly facilitates phagocytosis of 'phage-susceptible bacteria. Evidence of this may be noted at times clinically. In carbuncles, for example, I have noted more than the usual degree of purulency following a rapid regression of the signs of intense inflammation. There seems little doubt that in pyogenic infections phagocytosis is facilitated by the presence of a suitable bacteriophage.

While the immediate rôle the 'phage may play in freeing the organisms from the tissues should probably be considered the most important in the attainment of a successful therapeutic result, this probably does not entirely sum up the effects of this form of therapy. I allude this time to the antigenic action of the bacterial proteins carried in the filtrate, plus those arising from the bacterial dissolution within the body. While bacterial lysis may be regarded as contributing in a direct way to recovery, the products of this lysis probably serve to stimulate the formation of such immunity as may naturally follow a given infection. The latter does not necessarily follow closely on the heels of the former. Time, as we know, is an important factor in the formation of any sort of acquired active immunity. The relative importance of the two factors is well brought out by some experiments which d'Herelle³ carried out on the prevention of hemorrhagic septicemia in the water buffaloes of Indo-China. He noted on administering the bacteriophage prophylactically in these animals two refractory periods, separated by an interval during which the animals were fully susceptible to experimental inoculation. The first refractory period, only of forty-eight hours' duration, could be directly attributed to the presence of the injected bacteriophage. With the elimination of the latter from the body the animals again became fully susceptible. This fully susceptible period was followed in due time by a second and much more lasting refractory period. Since the second refractory period could also be induced by filtrates in which the 'phage itself had been in-

activated, it is necessary to conclude that in the production of this more lasting immunity the products of 'phage lysis, rather than the 'phage itself, played the important rôle.

CONCLUDING REMARKS

I hope that this brief review serves to indicate somewhat the complexity of the problem at hand. While there undoubtedly is something to support the view that the bacteriophage possesses therapeutic properties, it is at the same time clear that its usefulness tends to be limited by factors which may or may not eventually be brought under control. The time has certainly not yet arrived when the wholesale marketing of stock-bacteriophages, with therapeutic claims, can be scientifically justified. Before this can be justified it will become necessary to probe much more deeply into the question of its therapeutic merits. Larger collections of highly active bacteriophages will have to be brought under our command; standards will have to be determined for 'phage products; the best method of carrying out the treatments will have to be learned; and other questions of a similar nature will have to be settled before commercial distribution can be properly undertaken. It may, indeed, never be possible to justify its commercial production. Its usefulness at best may prove restricted. Only a careful and open-minded inquiry can reveal to us the real merits of this new form of therapy.

Stanford University, Palo Alto.

REFERENCES

1. d'Herelle, F.: *Compt. Rend. Acad. Sci.*, 1917, 165, 373.
2. d'Herelle, F.: *Le Bactériophage: Son Rôle dans l'Immunité*. Par., Masson et Cie., 1921, Monographie de l'Inst. Pasteur, 277 pages.
3. d'Herelle, F.: *The Bacteriophage and Its Behavior*, Williams and Wilkins Co., Baltimore, 1926, 629 pages.
4. da Costa Cruz, J.: *Compt. Rend. Soc. Biol.*, 1924, 91, 845.
5. Pereira, O.: *O Phenomeno de d'Herelle e as Infecções Pelos Bacilos coli e Dysentericos*. Thèse, Porto Alegre, Lib. do Globo., 1924. Quoted by d'Herelle (3).
6. Spence, R. C., and McKinley, E. B.: *Southern Med. Jour.*, 1924, 17, 563.
7. Munter, H., and Boenheim, C.: *Zeitschr. f. Kinderheilk.*, 1925, 39, 388.
8. Otto, R., and Munter, H.: *Deut. med. Wchnschr.*, 1921, 47, 1579.
9. Davison, W. C.: *Am. Jour. Dis. Children*, 1922, 23, 531.
10. Beckerich, A., and Hauduroy, P.: *Compt. Rend. Soc. Biol.*, 1922, 86, 168.
11. Beckerich, A., and Hauduroy, P.: *Jour. Bact.*, 1923, 8, 163.
12. Philibert, A., and Hauduroy, P.: *Rev. Path. Comparée*, 1923, No. 240, December 5.
13. Hauduroy, P., and Arsimoles: *Progrès Med.*, 1923, 3 s, 36, 61.
14. Alessandrini, A., and Doria, R.: *Med. Klin.*, 1924, 20, 1447.
15. Smith, J.: *Brit. Med. Jour.*, 1924, 2, 47.
16. Richet, C., and Azerad and Delarne: *Bull. et Mém. Soc. Méd. d'Hôp. de Par.*, 1924, 40, 838.
17. Herderschee, D., and Wolff, L. K.: *Nederl. Tijdschr. v. Geneesk.*, 1924, 68, pt. 1, 2706.
18. Courcoux, Philibert and Corday: *Bull. et Mém. de la Soc. Méd. d'Hôp. de Par.*, 1922, 46, 1151.
19. Beckerich, A., and Hauduroy, P.: *Bull. Méd. Par.*, 1923, 37, 273.
20. Alphonsi: *Bull. de la Soc. d'Obstét. et de Gyn. de Par.*, 1924, 13, 573.
21. Arloing, F., Dufour, Bouvier and Sempe: *Compt. Rend. Soc. Méd. des Hôp. de Lyon*, May 13, 1924.
22. Philibert, A.: *Clinique et Lab.*, Par., 1924, January 20.
23. Lehndorff, A.: *Wien. med. Wchnschr.*, 1924, 74, 1051.
24. Winans, H. M.: *Texas State Jour. Med.*, Fort Worth, 1924-25, 20, 542.
25. Frisch, B.: *Wien. klin. Wchnschr.*, 1925, 38, 839.
26. Zdansky, E.: *Med. Klin. Berl.*, 1924, 20, 1485.
27. Zdansky, E.: *Wiener Arch. f. Inner. Medizin.*, 1925, 11, 533.
28. Zdansky, E.: *Seuchenbekämpfung*, Wien., 1925, 2, 150.
29. Larkum, N. W.: *Jour. Bact.*, 1926, 12, 203 and 225.
30. Ravina, A.: *Presse Méd.*, 1926, 34, 548.
31. Dalsace, R.: *Jour. d'Urol.*, 1926, 21, 123.
32. Cowie, D. M.: *Ann. Clin. Med.*, 1926, 5, 57.
33. Krueger, A. P.; Faber, H. K., and Schultz, E. W.: (In press.)
34. Bruynoghe, R., and Maisin, J.: *Compt. Rend. Soc. Biol.*, 1921, 85, 1120.
35. Gratia, A.: *Bull. Acad. Roy. de Méd. de Belg.*, Brux., 1922, 5 s, 2, 72.
36. Gratia, A.: *Compt. Rend. Soc. Biol.*, 1922, 86, 276.
37. Gougerot and Peyre, E.: *Bull. Soc. Franc. de Dermat. et Syph.*, 1924, 31, 420.
38. Gougerot and Peyre, E.: *Compt. Rend. Soc. Biol.*, 1924, 91, 452.
39. Barbosa, Nelson: *Brazil Med.*, Rio de Jan., 1923, 37, 297. Quoted by d'Herelle (3).
40. McKinley, E. B.: *Arch. Int. Med.*, 1923, 32, 899.
41. Larkum, N. W.: *Michigan Department Health series No. 53*, July 1928.
42. Larkum, N. W.: *Amer. Jour. Public Health*, 1929, 19, 31.
43. LeLouet, G. M.: *Jour. Am. Vet. Med. Ass.*, Wash., 1925-26, 67, 713.
44. d'Herelle, F.: *Presse Méd.*, 1925, No. 84, 1393.
45. d'Herelle, F.: *Lane Medical Lectures*, Stanford University, California, October 22-26, 1928.
46. Sickenga, F. N.: *Nederlandsch. Maandschr. v. Geneesk.*, Amsterdam, 1925, 13, 141. (*Jour. Am. Med. Assn.*, 85, 1440.)
47. Bordet, J., and Ciuca, M.: *Compt. Rend. Soc. Biol.*, 1921, 84, 280.
48. Sonnenschein, C.: *Deut. med. Wchnschr.*, 1925, 51.
49. Katsu, S.: *Deut. med. Wchnschr.*, 1925, 51, 1896.
50. Marcuse, K.: *Deut. med. Wchnschr.*, 1924, 50, 334.
51. Hauduroy, P.: *Compt. Rend. Soc. Biol.*, 1925, 92, 1442.
52. Bruynoghe, R., and Maisin, J.: *Compt. Rend. Soc. Biol.*, 1922, 86, 292.
53. Weiss, E., and Arnold, L.: *Jour. Infect. Dis.*, 1924, 34, 315.
54. Nelson, A. R.: *Jour. Immunol.*, 1924, 15, 43.
55. Smith, G. H.: *Jour. Immunol.*, 1928, 15, 125.

SOCIAL ASPECTS OF DERMATOLOGY*

By ERNEST DWIGHT CHIPMAN, M. D.
San Francisco

IN choosing this topic I wish to stress the human side of medical practice. And when I say the human side of our practice I am thinking of the thousand and one considerations which influence and motivate us in our contact with the public at large or with the individual patient. For, after all, the practice of medicine means infinitely more than the making of a diagnosis and the prescribing of a remedy. Many collateral obligations devolve upon physicians, obligations to serve, perhaps a little beyond the ordinary line of duty.

In a comparatively recent book entitled "America Comes of Age," André Siegfried dilates upon the puritanic urge for uplift and the craze for "service" so prevalent in this country. His thought seemingly is that much of this talk is in the nature of "window dressing," mostly insincere and largely for revenue. I certainly do not want to be included among those who sing of service and sigh for profit in the same breath. Calls constantly come to physicians, insistent calls for service that are untainted by the thought of pelf. It matters not to what special field of medicine our activities are confined, to all of us there come patients with problems so poignant they transcend such trivial procedures as the writing of a prescription or the turning on of some current. In dermatology and syphilology we meet certain problems, one might say stock problems, which call for a service from us over and above the routine treatment and advice. You are all familiar with the patient to whom the four plus Wassermann comes as a bolt from the blue. You know, too, of the young man who is Wassermann-fast and who has had years of treatment with no clinical signs and who wishes to marry. What about these patients? Have they nothing to expect of us beyond a reasonable facility with the pen or the Luer syringe?

We meet patients with inoperable carcinomas, we meet lepers, we discover coccidioidal granulomas, and these are frankly tragic; but day by day we come in contact with numerous quasi-tragedies and often pass them by with an unseeing eye.

An ordinary case of acne does not usually cause us much concern, but it may easily be the starting point of a marked neurosis. How often do we see patients, young women as a rule, who become so depressed over this condition that they will not attend the most informal of functions. They remain at home brooding over and exaggerating to themselves their disfigurement until they border on melancholia. Our colleagues may jokingly refer to us as "beauty doctors" for treating these conditions, but we know that successful treatment has a much more profound general

effect upon the well-being of this patient than any system which these jesters might employ.

Then there is the patch of psoriasis. Upon the knees of the longshoreman this does not count for much. Upon the elbows of the débutante it rates as a social tragedy. The hypertrichosis, the nevus, the keloid in young women who are, or think they are, of an age to get the most out of life are calamities of the highest degree. The victims of these blemishes which we are prone to pass over lightly often require an amount of care and understanding which is seemingly disproportionate to the extent of the lesions.

These are just a few random references to our individual contacts. We have certain obligations to the public. It is incumbent upon us to build up sanely and without creating panic, the truth concerning cancer and the precancerous conditions about which we are frequently consulted. On the other hand we must help to tear down some of the old inherited notions such as "bad blood causes pimples," "uric acid causes all sorts of rashes."

Personally one of my fondest duties is to persuade an inquisitive mother-in-law that the eruption on the son-in-law is in nowise conditioned upon the state of the blood, or that we have had a complete analysis of the blood made and it appears chemically pure. It is also pleasing to assure the wife that the husband's eruption does not denote moral turpitude, and we must accept the assurance of the mother of the babe with an eruption that there is no taint in the blood on her side of the family. Having done this we must make it plain that the baby's disease is in nowise hereditary and that the blood of her husband and his forbears is probably 100 per cent pure. Some mothers seem to cherish this information quite as much as the prescription given for the baby.

One manifest duty to the public is to control the spread of epidemics. What concerns us at the moment as a real public health problem is the rapid cure and efficient prophylaxis in epidermophyton infection. The fact that so often it is latent makes many subjects doubtful of its seriousness. As conscientious dermatologists we should do our best to disseminate the truth about this widespread infection.

Another duty we owe to society which I should like to emphasize because it is one which we have neglected, is teaching hospital nurses, particularly those in which there are training schools, the application of a satisfactory dermatologic dressing. It may appear a broad statement, but I venture to assert that not ten per cent of the trained nurses we meet are capable of applying a satisfactory dermatologic dressing. A frequent method of applying an ointment to an inflamed surface is to spread it upon the woolly side of a strip of lint, bind it on and allow it to stick like so much adhesive tape to the poor suffering tissue, which would do so much better if left alone. Even such a simple application as calamine lotion is bound on with layer upon layer of gauze, and we are indeed fortunate if the dressing is not climaxed with a layer or two of oiled muslin. Compresses which must be kept constantly moist in

*Chairman's address, Dermatology and Syphilology Section, at the Fifty-Eighth Annual Session of the California Medical Association, May 6-9, 1929.

order to be effective, defeat their purpose by being allowed to dry upon an oozing surface and so aggravate the original condition when they are removed.

It is a relatively simple matter when dealing with one private patient to instruct the nurse as to a given application, but in hospital wards the nurse who is on duty in the morning is gone in the afternoon, and within a week one or two new ones may appear.

I venture the opinion that we do not quite measure up to our obligations in this respect. Many of us give lectures to nurses in training schools. If we will accentuate the teaching of the art of applying dermatologic remedies it will be of help. If dermatologists will unite upon a standard technique so that the California trained nurse may have a better idea of what is expected of her in our specialty, we shall be taking a forward step. May I suggest that for next year's meeting someone be designated to prepare a paper upon this subject. After a full discussion of this paper we should have a good digest of our collective sentiment, which will be of value to the public, to the nurses, to our patients, and to ourselves.

350 Post Street.

HEART-BLOCK—COMPLETE, COMPENSATED*

REPORT OF CASES

By J. MARION READ, M. D.
San Francisco

DISCUSSION by Verne R. Mason, M. D., Los Angeles;
John J. Sampson, M. D., San Francisco.

HEART-BLOCK, of any kind or degree, denotes damage to vital structures and usually heralds persistent invalidism or early demise. As a rule the block is but one manifestation of extensive myocardial damage, such as occasionally follows diphtheria or more frequently occurs in chronic cardiovascular sclerosis. With an impaired myocardium, the advent of heart-block, besides serving as an indicator of the extent of the damage, is apt to add to the difficulty of maintaining compensation. For these reasons heart-block is regarded as a portentous sign in cardiac disease.

But there are exceptional cases where the conduction bundle seems to have suffered a severe injury by some nonprogressive pathological process which spared the general myocardium, or from which the latter recovered. A severe injury in these cases is surmised because the block is complete, and an undamaged muscle is assumed because complete compensation for ordinary life is maintained for several decades. In fact these cases of compensated, complete heart-block are usually discovered when the individual presents himself for some irrelevant condition and the physician's curiosity is aroused by the persistently slow pulse.

It is my purpose to report three such cases and try to show how these individuals maintain an

* Read before the San Francisco County Medical Society on March 9, 1929.

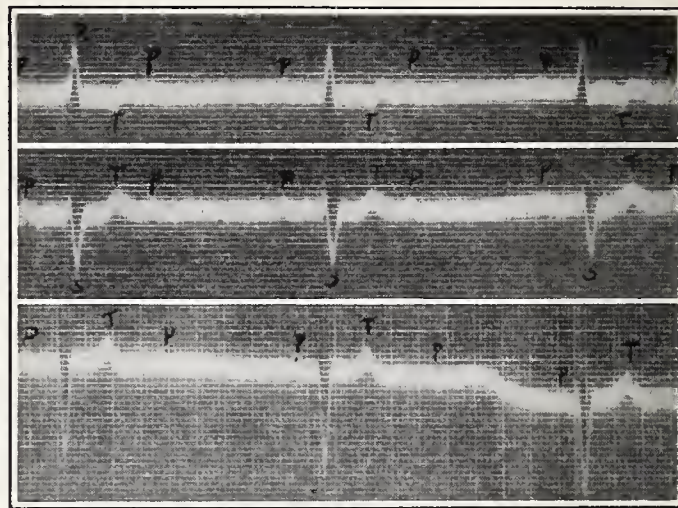


Fig. 1 (Case 1).—Three leads of electrocardiograms taken June 21, 1926. Complete block. Auricular rate, 62; ventricular rate, 30. Left axis deviation.

adequate circulation with a pulse rate constantly below 50 per minute. I shall also try to draw some conclusions as to prognosis, and the fitness of these individuals for major surgical operations.

REPORT OF CASES

CASE 1.—Male, age seventy-eight years. No complaint. His slow pulse had aroused the interest of a doctor friend who referred him for an electrocardiogram. It is not known when his pulse became slow, as the old gentleman, whose memory is not very good, can give no information on this point. I am informed in a letter from the physician who attended him in 1919 during an attack of influenza that his pulse was in the forties at that time and remained so in that and subsequent respiratory tract infections, even though the temperature went to 102 degrees.

There are no symptoms of circulatory insufficiency and he is able to earn a living for himself and wife as a court interpreter. He climbs four flights of stairs without dyspnea and states that his feet never swell.

Physical examination showed a stockily built man, weight 170 pounds, height 66½ inches. Complexion ruddy. Pulse rate, 30; blood pressure, 200/70. No edema of ankles or other signs of inadequate circulation. Systolic murmur at apex and aortic area; thickening of peripheral vessels not noticeable. Pulse very forceful, full and regular, and accelerates six to eight beats per minute on exercise.

Electrocardiogram (June 21, 1926) showed complete heart-block. Auricular rate, 62; ventricular, 30 (Fig. 1).

When next seen, in March 1927, the pulse rate was 38; blood pressure, 174/72. Four months later the pulse rate was 34 to 38 and blood pressure, 216/92. On November 29, 1927, these figures were 34 and 178/82. Another electrocardiogram on this date showed complete block still present, auricular rate 58, ventricular 32.

I visited him at his place of employment on February 19, 1929, and found him in his customary good health. The pulse was regular, very full volume, and

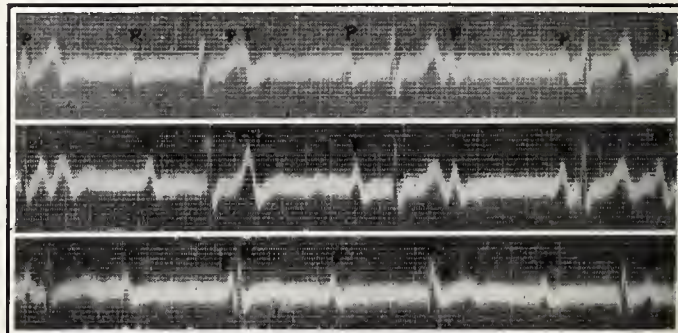


Fig. 2 (Case 2).—Three leads of electrocardiogram. Complete block. Auricular rate, 65; ventricular rate, 45.

40 per minute; the blood pressure was 204/68. There was no edema of the ankles and no dyspnea on climbing one flight of stairs.

CASE 2.—Female, age forty-eight years. When six years old she had diphtheria during an epidemic in which three of five children died. Shortly after this she says she turned very blue when surf-bathing. She has known that she had a very slow pulse since her teens, when she was taken to a physician for some other irrelevant complaint. She says at the age of twenty she could dance all night, and now suffers no restriction of activity as she walks, rows, swims, and plays golf, without dyspnea or other signs of circulatory embarrassment. She took an anesthetic at twenty-five years for childbirth.

I first saw her July 28, 1926. Pulse rate, 39; after exercise, 44 per minute. Blood pressure, 180/80. Electrocardiograms revealed a complete heart-block; auricular rate, 60; ventricular, 40 (Fig. 2).

Physical examination showed good color, no edema. Systolic murmur at apex on expiration; also at pulmonary area. When taking the blood pressure there was observed a variation in the force of the beats; also on auscultation there was noted a difference in the sound quality of successive beats.

She was seen again on April 13, 1927, and reported she had enjoyed her usual good health during the intervening nine months. The pulse rate was 39 to 41, and there was still the definite variation in the force of the heart-beat. Careful study of the blood pressure, reading the systolic pressure by palpation and auscultation, revealed that some of the contractions raised the pressure to 170 to 174 millimeters, while other of the contractions registered only 144 to 150 millimeters. The diastolic pressure was 74 millimeters.

In September 26, 1927, I read the blood pressure as 190/84, and another physician read 194/86. Four days later the systolic pressure varied from 140 to 156 with a diastolic pressure of 76. The pulse rate of 44 per minute was reduced to 41 by breath-holding.

She was last seen on February 28, 1929, and reported her general condition excellent as usual. The pulse rate, seated, was 41 per minute, and the diastolic pressure, 78. The systolic pressure varied from 160 to 174.

CASE 3.—Male, age sixty years. Measles and typhoid fever in childhood. In 1890, *æt.* twenty-one years, had a chancre followed by secondary skin lesions. He has been treated at intervals for the past ten to twelve years with iodids and mercury, and has received seven injections of salvarsan. The Wassermann reaction has never been positive. Wife and three children are healthy.

In 1903, *æt.* thirty-five years, he had pneumonia during which his heart rate dropped to 40-42, and he was told by his physician, the professor of medicine in a large medical school, that his heart was very seriously affected and that he could expect to live only a few days. He had noticed some pulse irregularities occasionally, but says that since then his pulse has remained constantly regular and slow. He is now

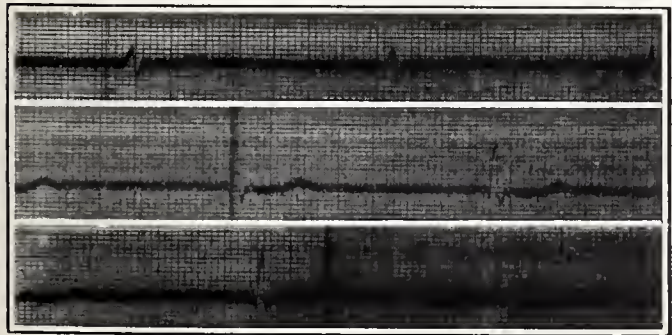


Fig. 3 (Case 3).—Three leads of electrocardiogram taken January 13, 1922. Complete block with auricular fibrillation. Ventricular rate, 45.

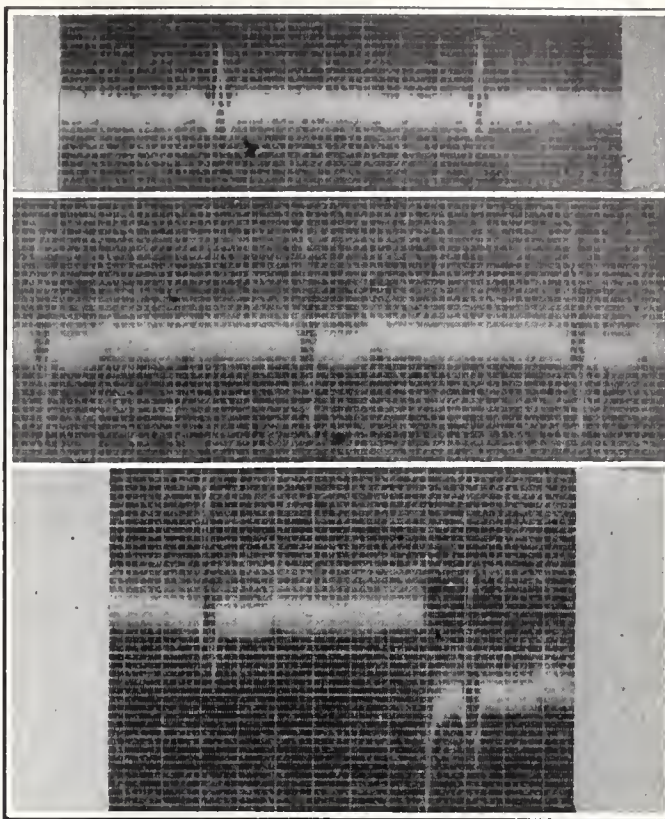


Fig. 4 (Case 3).—Three leads of electrocardiogram taken October 13, 1922. Complete block with auricular fibrillation. Ventricular rate, 45.

slightly dyspneic on exertion, and at times there is a little edema of the legs.

In 1919 he developed manifestations of a renal stone, confirmed by roentgen ray in 1922, and was referred to a physician for opinion regarding the ability of his heart to carry him through a major operation. Examination then showed considerable arteriosclerosis, enlarged heart, soft, blowing systolic murmur at apex and toward sternum; heart sounds of good quality. Pulse rate, 44, regular. Blood pressure, 145/70.

An electrocardiogram taken January 13, 1922, showed complete heart-block with auricular fibrillation and slight right axis deviation (Fig. 3).

While under observation for two months there were *râles* constantly present at both lung bases, and he showed coupled beats after test exercises or when the stomach was distended. It is recorded that one of the beats was "at a pressure of 145 and the other 90."

In October 1927, the renal stone again caused pain and the genito-urinary surgeon referred him to another specialist for his opinion. The clinical records at this examination confirmed the observations given above. Pulse rate, 42 to 46; blood pressure, 185/70.

An electrocardiogram on October 13, 1927, showed the same conditions present as in January, 1922. (Fig. 4.)

The renal stone later became lodged in the ureter and the resultant infection in the kidney necessitated its removal, so he reentered the hospital May 25, 1928, where he continued to run a fever to 104 with a pulse rate from 45 to 74. The abscessed kidney was removed May 30, and he made an uneventful recovery. The pulse was 42 to 56, and an electrocardiogram taken June 20, 1928, showed auricular fibrillation and complete block still present, ventricular rate 45.

COMMENT

Clinically these cases are interesting from the viewpoint of etiology, long duration, physical findings, and the absence of any attacks suggesting Stokes-Adams syndrome.

The date of onset is known definitely only in Case 3, for in all probability he has had complete

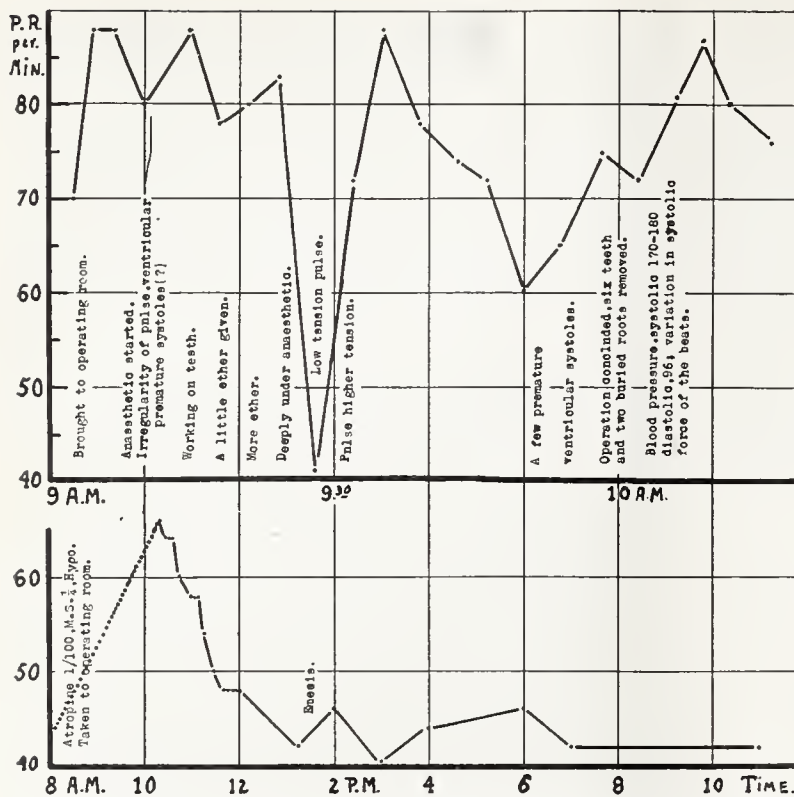


Fig. 5 (Case 2).—Upper chart shows pulse rate during general anesthetic. Time of pulse readings and notations approximate. Lower chart shows pulse rate for twelve hours in hospital following operation. Dotted portion represented in detail in upper curve.

heart-block since 1903. But the etiology is less certain, the most evident cause being the syphilitic infection contracted thirteen years prior, although there are no other signs of tertiary syphilis and treatment has been active since the onset. There is considerable arteriosclerosis present now, but it does not seem probable that this was the cause of his heart-block with its onset, *æt.* thirty-four years. It is more probable that an acute infection (pneumonia) (Frommel and Thevenod,¹ Porter²) was the etiologic agent. A definite diagnosis of pneumonia cannot be confirmed from clinical records, as the physician who attended him at that time has been dead many years.

In Case 2 the date of onset is not so definitely fixed nor can we be certain that diphtheria (*æt.* six years) was the cause. Any degree of block in diphtheria usually terminates fatally. In the literature I was able to find only two (White and Jones,³ Parkinson⁴) cases of heart-block occurring during diphtheria from which the patients recovered. One of these was a girl, two or three years old, who had diphtheria in 1907 and on the third day developed a high grade of heart-block. This persisted, and electrocardiograms nine and twelve years later showed complete auriculoventricular block with ventricular

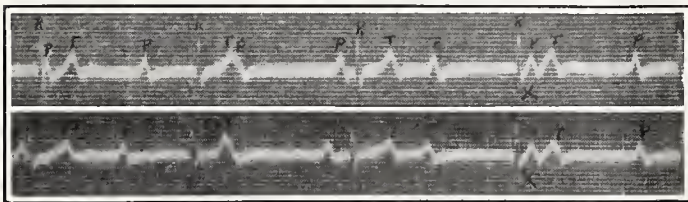


Fig. 6 (Case 2).—Electrocardiograms, both Lead 2. The upper taken before and the lower after 1/100 grain of atropin subcutaneously. No change in either auricular or ventricular rate.

rate 40 to 50. In 1926, nineteen years after having diphtheria, the complete block was still present though she felt perfectly well. Such instances are rare, however, for Jones and White³ in a recent electrocardiographic study of one hundred cases of severe and moderately severe diphtheria could find no cases of heart-block five to ten years after the infection.

Despite its rarity the most probable cause of the block in Case 2 is, in my opinion, diphtheria. As it has existed since childhood there is a possibility that we have here a case of congenital block. But this does not seem likely, as there is no other evidence of congenital cardiac malformation, which is usually part of the picture accompanying congenital block. The slow pulse was not definitely observed by physicians until she was about fifteen years of age. But attributing the slow pulse then noted to the same cause which now produces her bradycardia, we can be reasonably certain that this woman has had heart-block, probably complete, for over thirty years.

In Case 1 there is not even a probable cause of auriculoventricular dissociation revealed in the history. In this patient the pulse rate has been in the neighborhood of 40 per minute for the past ten years, and from electrocardiographic studies it is established that this bradycardia is due to complete heart-block, which has been present for the past two and a half years. During this time he has apparently suffered no restriction of activity. His wife says that at night sometimes "his breathing stops and then there is a struggle before it begins again." This may be a laywoman's description of Sheyne-Stokes breathing, which Mackenzie⁵ (page 274) says sometimes occurs in heart-block, but which is not uncommon at night in cerebral arteriosclerosis. This observation and the patient's age suggests arteriosclerosis as the cause of the heart-block despite the absence of evident sclerotic changes in the peripheral vessels.

HEART SIZE

All of these individuals have enlarged hearts (Table 1), and this seems true of all cases of complete compensated heart-block in the literature of which heart size is recorded. A case of Smith's,⁷ for which comparable data are published, is added in Table 1.

MURMURS

All these patients had apical systolic murmurs which were heard also toward the sternum and the aortic area in one case. Systolic murmurs are reported as present in the cases of Smith,⁶ Wilson and Robinson,⁷ Aub and Stern,⁸ Wilson,⁹ Musser,¹⁰ and numerous other clinicians who have written upon complete heart-block.

STOKES-ADAMS SYNDROME

As already noted, none of these three individuals report any spells of syncope, which are

so frequently a part of the clinical picture of heart-block. In fact the high incidence of syncope in heart-block has led many writers to use "Stokes-Adams disease" as a synonym for heart-block, though it would seem advisable to reserve the former term for those cases with syncope (Griffith¹¹).

It is inferred from the absence of Stokes-Adams syndrome in my cases that the block in each instance was complete from the start and has remained so. The syndrome is more frequent when the block is incomplete or intermittent, and the ventricle remains at a standstill in the periods of transition from one rhythm to another. Syncope may occur with complete block, however, when the ventricular rate falls below twenty per minute (Wilson⁹). Its absence in complete block has been noted by others.⁷

Carter and Howland,¹² in reporting a case of congenital complete block and commenting upon seven others collected from the literature, say: "Perhaps the most significant feature in this small series of cases is the absence of any history of grave syncopal attacks. . . . It would seem apparently that, as a result of the congenital nature of the lesion, the heart early acquired the power of adapting itself to the constant load necessary to maintain an efficient circulation."

BLOOD PRESSURE

All three of my patients had elevated systolic and normal diastolic pressures, which seem to be the usual findings in compensated complete block. Musser¹⁰ also called attention to this finding in an article entitled "Heart-Block Associated with High Blood Pressure," and, in reviewing the literature of heart-block from 1904 to 1916, cites fifteen articles reporting nineteen cases with systolic pressures ranging from 196 to 270. Two of these nineteen patients, like one of Musser's, had a lower systolic pressure in intervals between periods of block.

A high systolic and normal diastolic pressure seem to be definitely associated with the condition of complete block, or at least are characteristic during compensation. Furthermore, it seems that the resulting large pulse pressure is physiologically related to the maintenance of an adequate circulation with a very slow rate of ventricular contraction. Suggestive of this are the blood pressure readings in the same individuals at different times with and without block. Two cases are reported (Carter and Dieuaide,¹³ and Feil¹⁴) in which, at the advent of complete block, the pulse pressure increased 20 millimeters or more above the value obtaining during normal conduction.

In addition to this constant compensatory alteration of the blood pressure in complete compensated heart-block there are other adaptations, the study of which throws some light upon certain phases of cardiodynamics. The two nonfibrillating patients in this series have been studied with the aid of the polygraph and roentgen kymograph and observations made which will be reported elsewhere.

But aside from the questions of cardiodynamics and the physiology of circulation which these

TABLE 1.—*Heart Size, Determined by Teleroentgenogram, in Cases of Heart-Block*

	Case			Case of S. C. Smith
	I	II	III	
Heart				
From median line to Left border	9.0	11.5	13.0	
Right border	3.7	4.5	7.0	
Total transverse diameter	12.7	16.0	20.0	13.0
Longitudinal diameter	14.6	16.5	19.0	
Aorta				
From median line to Left border	3.9	4.4	3.5	
Right border	2.6	2.6	1.5	
Total diameter	6.5	7.0	5.0	
Internal diameter of chest	25.6	29.5	28.3	25.0
Cardiothoracic index	0.50	0.54	0.70	0.52

studies precipitate, there are practical aspects of these cases which demand recognition from every practitioner of medicine. First, it must be recognized that the heart showing complete block may function remarkably well for many years and efficiently maintain a circulation adequate for ordinary life. Secondly, this presumably handicapped organ can even sustain an individual through the stress of major operations.

SURGICAL RISK

The question sometimes arises, as in Case 3, whether or not an individual with complete heart-block can take a general anesthetic. The woman of Case 2 took an anesthetic at childbirth without ill effects at the time; or subsequently, as her comfortable existence the past twenty years testifies. In July 1927, she was advised to have two roots and six teeth removed, and the dental surgeon wished her to take a general anesthetic. It was my opinion that it would be safe, and a gas-oxygen-ether anesthetic was employed. I was present throughout the operation and took frequent readings of the pulse, which was always regular and slow (Fig. 5). It reached as high as eighty-eight beats per minute, so the question arose as to whether the atropin (grain 1/150) with morphin given in preparation could have abolished the block. To settle this point she was given atropin (grain 1/100) by hypodermic injection and electrocardiograms taken before and after its administration (Fig. 6). No change in either auricular or ventricular rate was produced, though one might expect auricular rate to be accelerated. Barring some unlikely possibilities, one reaches the conclusion that excitement and the anesthetic may have increased the ventricular rate, though MacKenzie⁵ (page 274) states: "Causes of excitement and the administration of alcohol or chloroform have very slight or no effect on the

ventricle though the auricular contractions may be rendered much more frequent."

No electrocardiograms could be made at the time of operation, as the hospital where it took place was not equipped with an electrocardiograph.

Only one comment upon surgery in these patients was encountered in the literature. Hamilton, in discussing a case reported by McIntosh,¹⁵ says that he had seen a woman known to have heart-block for eighteen years "associated with hypertension" who had successfully passed through two major operations, one for gall stones and the other a hysterectomy.

In Case 3 of this series surgery was twice advised against because of the evidences of myocardial incompetency present at times and because the heart-block is associated with auricular fibrillation. But the ability of this heart to carry its owner through a major operation was later demonstrated. It seems, therefore, when the myocardium is able to maintain an adequate circulation, heart-block, *per se*, is no contraindication to major surgery, as appears from the case cited by Hamilton and Cases 2 and 3 of this series.

COMPLETE HEART-BLOCK AND AURICULAR FIBRILLATION

Since the patient of Case 3 has auricular fibrillation and at times shows evidence of decompensation, one wonders if, in such a case, the complete block has not afforded some compensation for the fibrillation. This probability has been pointed out by Bishop,¹⁶ whose patient, a man of seventy-seven years, was able to attend to business although he had fibrillated for over eight years, but had not required digitalis. Mackenzie⁵ cites three cases with auricular fibrillation and heart-block.

PROGNOSIS

It is evident from Cases 1 and 2 that complete heart-block is compatible with a normal existence and complete freedom from symptoms of cardiac failure. It has probably existed in Case 1 for over eight years and in Case 2 for over forty, although graphic evidence of heart-block in each case exists for only about two years and a half. The patient of Case 3 has undoubtedly had block for twenty-six years, and we produce graphic proof of its existence (with auricular fibrillation) for over six and one-half years. This patient is not completely compensated, but has led a fairly comfortable and useful life for over a quarter of a century.

The literature contains records of a number of individuals who have lived comfortable lives for many years with complete block—for example, Hamilton's¹⁵ patient with complete block for eighteen years. Mackenzie⁵ mentions "a case described by Keith in which there was a history of heart-block for eighteen years." He also mentions another (Case 77 in the appendix), twenty-four years of age, whose block occurred *æt.* five years, pulse rate of 42 to 43, with enlarged heart and systolic murmur, who was able to indulge in as strenuous a sport as tennis. Lewis¹⁷ mentions a man thirty-three years of age who was per-

fectly compensated with complete block for fifteen years.*

There are numerous cases recorded of patients who have lived for four or five years with known block. Dr. A. L. Bloomfield in a personal communication tells of a woman first seen in 1912, *æt.* seventy-two years, with pulse rate of 48, which rate still obtained in 1916 before death. Incidentally her blood pressure was 240/95 in 1916 and 260 systolic in 1912, when diastolic pressures were not being read.

White and Viko¹⁸ report that of twenty-four cases of complete heart-block they were able to follow, "nine cases were 'well' or in 'fair condition' though still showing heart-block when last noted, from one to seven years after the first record of the complete block. Of these nine, five had survived over five years, four of them being the four cases under forty years of age."

They further say, "Less than one-quarter of the cases of complete auriculoventricular block showed heart failure, either anginal or congestive, at the time of discovery; and also less than one-quarter gave a history of Stokes-Adams attacks." Their records show that complete auriculoventricular block is a far less serious condition than intraventricular block although it carries a higher death rate than partial block.

Griffith¹¹ in a Schorstein lecture says: "When the block has been complete for some time and the ventricle has found itself, there may be a great increase in the comfort of the patient and long life may follow."

Sir James Mackenzie⁵ summarizes prognosis in complete heart-block as follows: "The condition of the heart muscle, as shown by its efficiency, is the chief element in prognosis." One cannot, therefore, agree with Smith⁶ in his prognosis in the case of the youth of twenty years who was accidentally discovered to have complete block. Age seems to be a factor also; the younger the patient at the onset of block the better the prognosis, providing a fatal issue can be avoided for a time. Also the faster the idioventricular rate the better seems the outlook for a comfortable existence.

490 Post Street.

REFERENCES

1. Frommel, E., and Thevenod, A.: Blocage Auriculo-ventriculaire Complet et Transitoire a Cours d'une Pneumonie, Arch. Dis. Mal. d. Coeur, xix, 528, 1926.
2. Porter, R. B. M.: Heart-block in a Case of Pneumonia, Brit. Med. J., i, 858, 1914.
3. White, P. D., and Jones, T. D.: The Heart after Severe Diphtheria, Am. Heart J., iii, 190, 1927.
4. Parkinson, J.: Auricular Fibrillation Following Complete Heart-block in Diphtheria, Heart, vi, 13, 1915.
5. Mackenzie, J.: Diseases of the Heart, third edition, London, 1921.
6. Smith, S. Calvin: High Grade Heart-block—The Influence of Posture, Respiration and Exercise, Journ. A. M. A., lxxvi, 17, 1921.

* Since this paper was accepted for publication a follow-up report on Lewis' case has appeared in "Heart," Vol. xiv, p. 289. The patient, now fifty years old, has had complete block for twenty-eight years, but enjoys vigorous health and suffers no limitation of activity.

7. Wilson, F. N., and Robinson, G. C.: Heart-block, 1. Two Cases of Complete Heart-block Showing Unusual Features, *Arch. Int. Med.*, xxi, 166, 1918.

8. Aub, J. C., and Stern, N. S.: The Influence of Large Doses of Thyroid Extract on the Total Metabolism and Heart in a Case of Heart-block, *Arch. Int. Med.*, xxi, 130, 1918.

9. Wilson, W. T., Jr.: Case of Complete Heart-block, *Journ. A. M. A.*, lxxv, 955, 1915.

10. Musser, J. H.: Heart-block associated with High Blood Pressure, *Arch. Int. Med.*, xx, 127, July 1917.

11. Griffith, T. W.: The Schorstein Lecture on Some Cardiac Problems, *Brit. Med. J.* ii, 913, October 12, 1912.

12. Carter, E. P., and Howland, J.: A Note upon the Occurrence of Congenital Atrioventricular Dissociation. Report of a Case of Congenital Complete Heart-block, *Johns Hopkins Hosp. Bull.*, xxxi, 351, October 1920.

13. Carter, E. P., and Dieuaide, F. R.: Recurrent Complete Heart-block with Normal Conduction between Attacks, *Johns Hopkins Hosp. Bull.* 1923, xxxiv, 401.

14. Feil, H.: The Use of Epinephrin in the Stokes-Adams Synchome, *Jour. A. M. A.*, lxxx, 26, January 6, 1923.

15. McIntosh, C. A.: A Case of Complete Heart-block with Eventual Recovery of Normal Rhythm in Association with Fibromyomata of the Stomach, *Canadian Med. Assn. J.*, xvii, 681, June 1927.

16. Bishop, Z. F.: The Beneficent Effect of Heart-block in Certain Cases of Cardiac Disease. Additional Report, *Journ. A. M. A.*, lxxxvii, 165, July 17, 1926.

17. Lewis, Thomas: *Clinical Disorders of the Heart-beat*, London, 1920, Shaw and Sons, ed. 5, p. 34.

18. White, P. D., and Viko, L. E.: Clinical Observations on Heart-block, *Am. J. Med. Sci.*, clxiv, 659, May 1923.

DISCUSSION

VERNE R. MASON, M. D. (523 West Sixth Street, Los Angeles).—Doctor Read has emphasized in this paper the importance of attempting to determine the ability of the heart to stand strain in the presence of an arrhythmia. Such observations are of great importance and can only be gained in medical practice where patients can be followed carefully over long periods of time. In the study of arrhythmias the importance of the results of instruments of precision has been overemphasized and attempts to determine the nature, extent, and severity of the underlying lesion have been much neglected. It is important, of course, to know the disturbance of rhythm, but it is of far greater value to know how much strain the heart with such arrhythmia can stand. Doctor Read has limited his report to the latter phase and has abstracted the reports of previous workers and added new observations. The point of view of the author is to be commended highly.



JOHN J. SAMPSON, M. D. (490 Post Street, San Francisco).—These three patients of Doctor Read serve as excellent examples of the necessity of using all the clinical data to determine a prognosis, rather than any single finding.

We are accustomed to associate such lesions of the conduction system as bundle branch block or complete auriculoventricular heart-block with generalized cardiac damage, and, necessarily, a grave prognosis.

Just such cases as these warn us that isolated conduction system lesions are possible, and may not be associated with general myocardial damage, and therefore warrant reserve in predicting the patient's future.

I believe that we shall become more conscious of such broad possibilities of the circulatory system adapting itself to mechanical defects, whether in valve damage or rate or rhythm disturbances, as here illus-

trated in the slow rate of heart-block. Presumably this adaptation is largely due to stroke volume output.

I feel we shall shortly be using schemes of stroke volume output measurement to determine the efficiency of cardiovascular and possibly of the tissue and lung gas exchange mechanisms in ordinary clinical conditions.

BRACHIAL PLEXUS BLOCK ANESTHESIA

ITS ADVANTAGES IN THE TREATMENT OF FRACTURES OF THE ARM

REPORT OF CASES

By J. E. STRODE, M. D.

Honolulu, T. H.

COMPARATIVELY few references are made to this method of anesthesia in American medical literature and yet, under certain conditions, it is of inestimable value.

ADVANTAGES OF THE METHOD

It is relatively easy of execution; gives a minimum degree of discomfort to the patient; is attended with little danger if the anatomical surroundings are borne in mind; is successful in the vast majority of cases; and gives relaxation not attained with any other form of anesthesia.

In addition it permits of manipulative procedures being carried out under the fluoroscope under the most favorable conditions. The administration of a general anesthetic in the dark room is accompanied by a number of potential dangers. The anesthetic is administered with difficulty, several assistants are needed, the room is generally small and the possibilities of coming in contact with high-tension wires is a real danger in most fluoroscopy rooms. With brachial plexus block anesthesia, the manipulative procedures can be carried out without undue haste, and the patient, being conscious, may cooperate as necessity requires.

TECHNIQUE

The route of approach to the brachial plexus has been the supraclavicular. Labat's modification of Kulenkampf's method seems to give the best results, and in general is as described below. The injection is usually made in the sitting position, the head turned toward the opposite shoulder. This gives the best possible exposure and places the brachial plexus beneath the clavicle near its midportion and in a line at about right angles to this bone. The midpoint of the clavicle is determined by bisecting the distance between the acromioclavicular and sternoclavicular articulations. This point, in the majority of instances, lies just lateral to the subclavian artery in a line with the prolongation of the external jugular vein. A wheal of anesthesia is raised one centimeter above the center of the clavicle. A needle of small caliber (0.6 to 0.8 millimeters in diameter and 5 to 8 centimeters in length), disconnected from the syringe, is directed toward the spine of the second thoracic vertebra and in the direction of the first rib, while the index finger of the opposite hand retracts the subclavian artery mesially. At a depth of 2 or 3 centimeters the deep cervical fascia is penetrated and paresthesias are

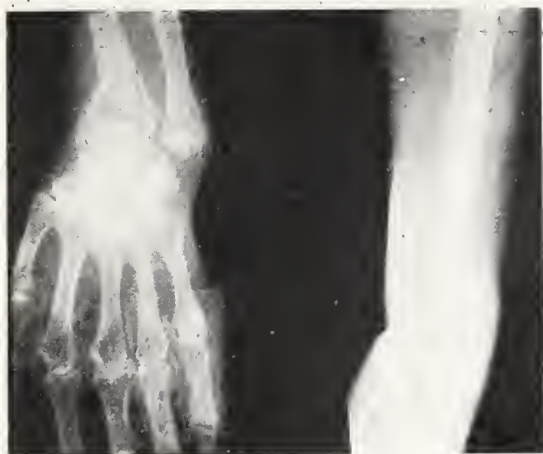


Fig. 1 (Case 1).—Before reduction.



Fig. 2 (Case 1).—After reduction.

generally elicited by the needle coming in contact with one of the cords of the brachial plexus, the most frequent one being referred down the forearm to the little finger. Ten cubic centimeters of 2 per cent novocain solution containing adrenalin is injected in this location. A second deposit of five cubic centimeters of the solution is made in the vicinity of the tubercle of Chassignac (transverse process of the sixth cervical) by partially withdrawing the needle and redirecting it upward toward the finger of the operator's left hand, which orients this tubercle. The third injection of five cubic centimeters is made along the lateral margin of the first rib behind the clavicle.

If paresthesia is not obtained, contact with the rib is made, the needle slightly withdrawn and the initial injection made. Introduction of the needle on the mesial side of the rib to a depth greater than that to which contact with the rib was made, is to be strictly avoided in order to prevent puncturing the dome of the pleura. The introduction of from 20 to 30 cubic centimeters of the novocain-adrenalin solution at the site of the primary injection will give satisfactory anesthesia in the majority of cases. The advantage of Labat's modification is that it takes care of the unusual types of brachial plexus formation.

The anesthesia obtained after blocking the brachial plexus is not complete in the upper arm. A zone of hyperalgesia is left over the shoulder due to the descending branches of the cervical plexus and along the inner side of the arm from the intercostohumeral nerves joining the lesser internal cutaneous nerve. To make the anesthesia complete it is necessary to make subcutaneous injections along the clavicle and acromion and to infiltrate the axilla fan-wise along the thoracic wall. Livingston and Wertheim¹ have warned against producing paresthesias, but so far we have experienced no unfavorable results; and when obtained, the anesthesia seems more com-

plete, due to depositing the anesthetic fluid in the closest proximity to the nerve trunks.

Anesthesia is usually complete in ten minutes and lasts from one to two hours. It may be repeated if necessary; as occurred in one case in which a tedious dissection with resection and anastomosis of tendons of the forearm was necessary because of an advanced tuberculous tenosynovitis.

The description of this technique and similar procedures, as described by Labat in his textbook, is so clear and lucid that his work is invaluable to anyone interested in the field of regional anesthesia.

INDICATIONS

The principal indications for this method of anesthesia come under two subdivisions: (1) Any condition in which a general anesthesia is contraindicated, such as shock, heart lesions, advanced age. (2) Cases in which reduction of the fracture should be carried out under the fluoroscope.

The advantages of using the fluoroscope are not generally appreciated. It should be employed in all fractures in which reduction is not dependent on continuous traction. Surgeons frequently are unwilling to devote the necessary time and patience to secure the proper anesthesia or to accommodate their eyes to the dark room so that they can see the fracture well under the fluoroscope. So they acquire the idea that fluoroscopy is of little aid. There are probably no conditions treated by the profession at large which are followed by so many bad results as fractures, and it is only by the most painstaking care at the time of reduction and afterward that good results can be assured. It is a well-established fact and one frequently lost sight of that the earliest possible reduction is attended by the greatest success.

The practice of inducing anesthesia by injecting large amounts of anesthetic solution about the site of a fracture should be condemned. It invites the



Fig. 1 (Case 4).—Lateral view before reduction.

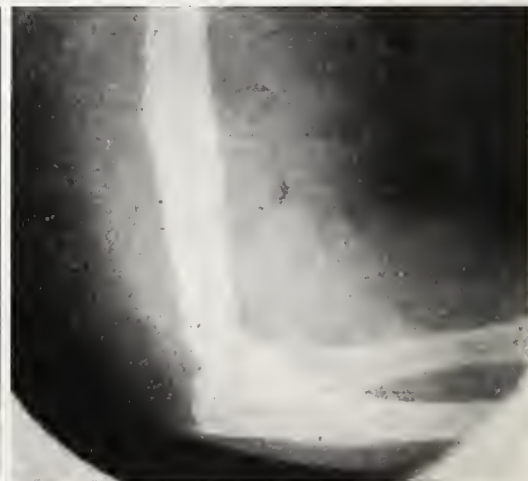


Fig. 2 (Case 4).—Lateral view eleven months after fracture.



Fig. 1 (Case 3).—Before reduction.

Fig. 2 (Case 3).—After attempted reduction under nitrous oxid.

Fig. 3 (Case 3).—Eight months after reduction.

possibility of introducing infection, it may lessen the resistance of already partially devitalized tissues, it is not applicable in compound fractures and does not give the necessary relaxation of muscles so necessary for proper reduction of the majority of fractures. Injection of nerves about the elbow may be used for fractures below this point though it is not so easily carried out nor the anesthesia so universally successful. It is at times useful as a supplement to an incomplete brachial plexus block. In fractures below the wrist, blocking of the nerves about this joint gives very satisfactory results; also blocking at the base of the fingers for fractures involving the phalanges.

CONTRAINDICATIONS

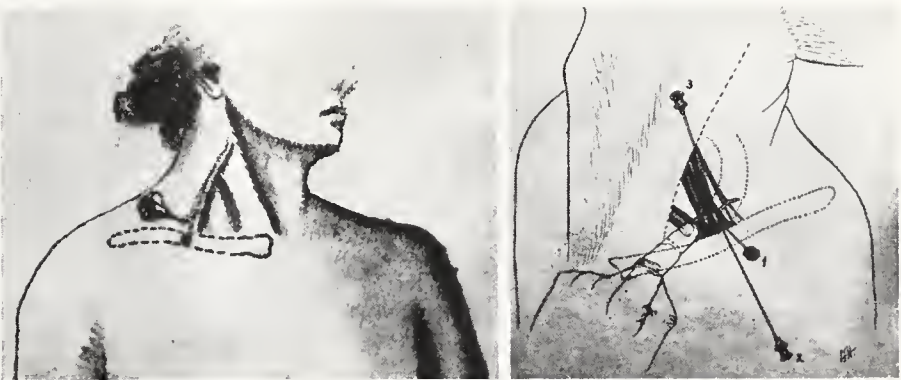
There seems to be no real contraindication to the method itself. In a thousand cases collected from the literature by Livingston and Wertheim, no permanent untoward results were recorded. The most serious complication was an occasional transient paralysis of the forearm which cleared up without treatment. The method may be difficult to use at times in the highly nervous, though a preliminary injection of morphin or scopolamin with reassurance from the operator, will do much to overcome this difficulty. It should not be attempted in children too young to cooperate, or in the very occasional patient where there is an idiosyncrasy to the drug. The advisability of doing bilateral block may be questioned, on the ground that it might produce paralysis of the phrenic nerves. In the one patient in whom this was done by us for

amputation of the forearms, no unfavorable results were noted.

REPORT OF CASES

The following are a few of the cases in which this method has been successfully used for fractures. It has also been very successfully used for all types of operative work such as amputations, nerve sutures and infections:

CASE 1.—Female, age 80, received a Colles' fracture with resulting impaction and displacement. Re-



Technique 1.—Showing superficial landmarks, center of clavicle and external jugular vein. Location of wheal and direction of needle for first injection.

Technique 2.—Deeper structures. Subclavian artery being retracted mesially, relationship of brachial plexus to first rib, clavicle and subclavian artery. Needles 1, 2, and 3 in position for injection, as described in text.

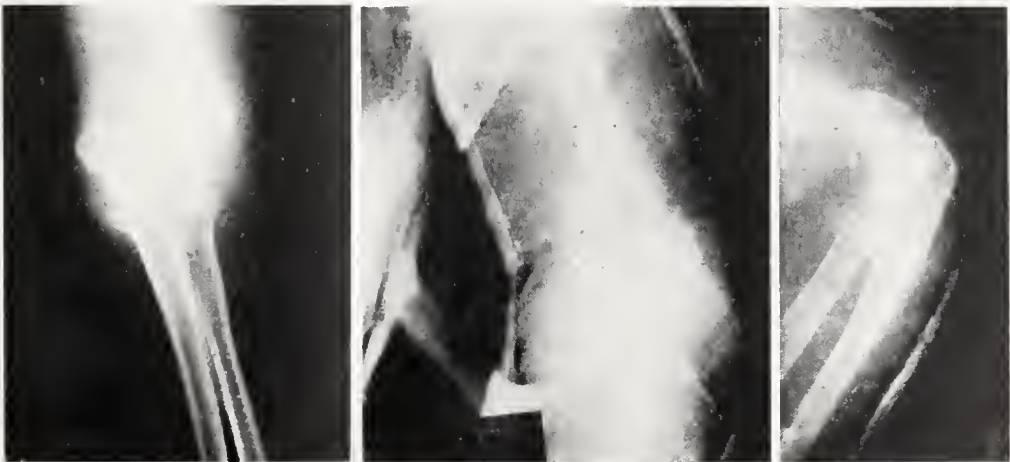


Fig. 1 (Case 2).—Before reduction.

Fig. 2 (Case 2).—After reduction.

Fig. 3 (Case 2).—Lateral view after reduction.

duction was carried out under the fluoroscope under brachial anesthesia. The advanced age and feebleness of this patient seemed to make this form of anesthesia particularly desirable.

CASE 2.—Korean, age 42, was injured on the island of Molokai by having his arm caught in the wheel of a truck. He was seen forty-eight hours later. At this time the examination revealed a supracondylar fracture of the left humerus, with posterior and upward displacement of the lower fragment. Brachial plexus block was induced and reduction carried out under the fluoroscope; a cast being applied. The absence of all pain, the complete relaxation, the ability to see when reduction was complete, and with the assistance of only an orderly, made the brachial anesthesia the method of choice in this case.

CASE 3.—Female, age 52, had a Colles' fracture of the right arm. An x-ray shortly thereafter showed comminution of the distal fragment with displacement upward and anteriorly. An attempt at reduction was made under nitrous oxid-oxygen anesthesia, but x-ray showed an unsatisfactory result. The brachial plexus was then anesthetized and reduction carried on under the fluoroscope. The ease with which the fragments were replaced under the guidance of the eye, with complete relaxation, was in marked contrast with the first attempt. Examination eight months later showed very little loss of function, and the only complaint from the patient was that the hand was somewhat weaker than previously.

CASE 4.—Female, age 28, received a comminuted fracture of the humerus above the right elbow joint. Under brachial block anesthesia a Steinman pin was inserted over the olecranon process internal to the insertion of the triceps tendon. This was carried out in the surgery and the patient removed to her room, where the traction apparatus was applied. Due to the patient's excessive weight, 280 pounds, and general physical condition, a general anesthesia was not considered advisable. The comfort enjoyed by the patient after the onset of anesthesia, was in marked contrast with the preceding writhing agony. With the patient's coöperation the entire procedure was made much easier and there was no disturbance of the apparatus afterward, as not infrequently occurs during the recovery period from a general anesthetic. The function of the arm has been completely regained.

CONCLUSIONS

The simplicity of the technique and the value of the coöperative aid of the patient are illustrated in these cases, and lead me to conclude:

1. Brachial block anesthesia is the method of choice in all cases in which a general anesthetic is not mandatory.

2. From a perusal of the literature, brachial plexus anesthesia is a method receiving less use by American surgeons than its merits would seem to warrant.

¹ 401 South Beretania Street.

REFERENCE

1. Livingston, E. M., and Wertheim, H.: Brachial Plexus Block—Its Clinical Application, *Jour. A. M. A.*, Vol. lxxxviii, May 7, 1927, 1465.

THE STIMULATING EFFECT OF CARBON DIOXID INHALATIONS IN DEMENTIA PRAECOX CATATONIA*

By CHAUNCEY D. LEAKE, PH. D.
San Francisco

ARTHUR E. GUEDEL, M. D.
Beverly Hills

AND

MARY E. BOTSFORD, M. D.
San Francisco

IN November 1928, at the suggestion of Dr. A. S. Loevenhart and Dr. Ralph M. Waters of Madison, Wisconsin, we undertook to determine whether or not we might confirm the results being obtained by them in association with Dr. W. F. Lorenz,¹ and others, in inducing, by carbon dioxid inhalations, brief periods of mental lucidity in patients suffering with catatonic dementia praecox. With the coöperation of Dr. Milton Lennon, Dr. Richard Harvey, Dr. C. W. Mack, Dr. E. W. Mullen, Dr. J. A. Cutting, and others, we conducted eight trials on five male patients, the protocols of which are included herewith.

METHOD OF ADMINISTRATION

The patient was approached with as little commotion as possible, and observations on pulse, respiratory rate, and blood pressure were made. The anesthetic mask was then carefully adjusted, with words of reassurance to the patient (whether he seemed to comprehend them or not), and while he was permitted to breathe air through the mask for some moments, the pulse, respiratory rate, and blood pressure were again observed. A concentration of 5 to 10 per cent carbon dioxid with the balance oxygen was then admitted for the patient to breathe, and increased to 20 per cent or higher within sixty seconds. This greatly augmented the depth of respiration and the height of the blood pressure. With the beginning of muscular movements, attempts at phonation, or the opening of the eyes, usually within two minutes after starting the carbon dioxid administration, the mask was removed and an attempt made to engage the patient in conversation.

It is our opinion that careful approach to the patient, with due regard for his psychic condition, is an important factor in achieving some degree of success with this technique.

CHARACTER OF RESPONSE

Respiration was increased in rate and depth, but when the mask was removed it returned to a normal condition within a few minutes. After the removal of the mask it frequently seemed to be of that jerky character sometimes noted when strong mental excitement is present in a normal person.

The systolic blood pressure rose rapidly to a maximum, usually above 200 mm. Hg., a minute

* From the Department of Pharmacology and the Anesthesia Division of the Department of Surgery of the University of California Medical School. Dedicated to the memory and inspiration of Dr. Arthur S. Loevenhart (1878-1929).

or so after the mask was removed. It then fell rather slowly, returning to the normal level within ten or fifteen minutes. The diastolic blood pressure did not rise so rapidly nor proportionally so high as the systolic. These reactions of the blood pressure to carbon dioxide inhalations were noted in normal animals and humans by Leake and Waters.²

The pulse rate, in most instances, rose upon administration of the carbon dioxide, and tended to remain higher than normal for some time after withdrawing the mask. In other cases it fell within ten minutes to below the normal rate.

Upon administering carbon dioxide the pupils dilated, although the normal size returned soon after the inhalation was stopped. The muscles lost their characteristic rigidity and fixation soon after the inhalation of carbon dioxide began. Muscular relaxation was followed by movements, which at times seemed convulsive. These stopped upon withdrawing the gas, when voluntary muscular activity of an apparently normal sort could be elicited. Within a few moments volition was lost and the characteristic cataleptic condition gradually returned. The convulsive effects in normal animals and humans of carbon dioxide inhalations were also observed by Leake and Waters.²

These physical phenomena varied considerably in different individuals and on different trials on the same patient. The extent and duration of these effects seem to have some relation to the concentration and amount of carbon dioxide inhaled, although our small number of trials prevents us from drawing definite conclusions.

The mental reactions in these patients to carbon dioxide inhalations are interesting, and, as in the case of the physical phenomena, seem to have some relation to the concentration and amount inhaled. This may be seen from the protocols of three trials on the same patient (V. H.). In a favorable reaction the blank facial expression changes to one of excited intelligence. The eyes open and, losing their dull stare, become keenly animated. Contrary responses to suggestion disappear as intelligent replies or actions are made to questions or commands. These mental reactions fade away within ten or fifteen minutes and the patient's condition returns to what it was previous to the administration of the gas.

No significant effects on respiration, pulse, blood pressure, or general condition resulted from applying the anesthetic mask and permitting the patient to breathe air through it for some moments. The results, therefore, cannot have been due to unaccustomed breathing, or to excitement incidental to strange voices and manipulations.

COMMENT

Confirmation is herewith given to the preliminary report recently published by Loevenhart, Lorenz, and Waters.¹ To the possible factors involved in the response, which they have mentioned, others may be added.

It has been noted that cases of dementia praecox catatonica may show periods of lucidity after gen-

eral anesthesia with various agents, and that such lucid intervals sometimes follow the high fever of an acute general infection.³ Any sufficiently severe general disturbance of metabolism may thus be expected to bring about the reaction noted after carbon dioxide inhalation. The metabolic disturbances in question seem especially to be such as may be reflected in sudden changes in the acid-base balance of the blood. To determine whether or not slower but more prolonged improvement may follow treatment on this hypothesis, ammonium chlorid or thyroid administrations deserve trial.

With the concentrations of carbon dioxide and oxygen used, the arterial blood is quite saturated with oxygen, but the dissociation curve of oxyhemoglobin is considerably depressed, so that oxygen may be expected to leave the blood more readily than it does normally when in contact with the tissues where the oxygen tension is below that in the alveoli. This fact in connection with the greatly increased blood pressure during and immediately after the carbon dioxide inhalation suggests that improving the oxygen supply to the cerebrum may be an important factor in the response.

It will be interesting to determine whether or not a patient's mental and physical condition might be improved by repeated administrations of carbon dioxide with oxygen two or three times a day for a week or more. In such an effort careful attention to the psychological attitude of the patient and a gentle manner of approach may be significant factors in the desired effect.

The taste of the mixture of carbon dioxide and oxygen inhaled is not very pleasant. It might be expedient to offer the patient a mild alkaline mouth wash as soon as the administration of the gases is stopped and the patient's coöperation can be secured.

Care must be taken in administering concentrations of carbon dioxide higher than 20 per cent with the balance oxygen not to induce convulsions or anesthesia. There is probably no great danger in either,² but these complications detract from the attention which the operators may give to their task of attempting to obtain the intelligent confidence and coöperation of their psychotic patient. These considerations tend to limit to one or two minutes the period of inhalation of the carbon dioxide mixtures for the purposes here discussed.

SUMMARY

Confirmation is given to the report of Loevenhart, Lorenz, and Waters¹ that brief periods of inhalation of a mixture of 30 per cent or more carbon dioxide with oxygen will induce short periods of mental clarity and intelligent responsiveness in certain cases of dementia praecox catatonica. These mixtures elevate systolic blood pressure to very high levels, stimulate the pulse rate as well as the rate and depth of respiration, and bring about more normal muscular responses. The favorable effects are only of ten to fifteen

minutes' duration, but it is suggested that repeated trial, with careful approach to the patient, may lead to more prolonged beneficial reaction.

University of California School of Medicine.

REFERENCES

1. Loevenhart, A. S., Lorenz, W. F., and Waters, R. M.: Cerebral Stimulation, *Journ. A. M. A.*, xcii, 880, March 16, 1929.
2. Leake, C. D., and Waters, R. M.: The Anesthetic Properties of Carbon Dioxid, *J. Pharmacol. and Exper. Therap.*, xxxiii, 280, July 1928; *Anesthesia and Analgesia*, viii, 17, January 1929.
3. Personal communications from Dr. C. W. Mack and Dr. E. W. Mullen.

TRIAL 1.—V. H., robust male, age forty-five. Diagnosis: Dementia praecox catatonia of twenty years' duration. Patient found in bed, pale complexion, eyes closed, head elevated above pillow, arms slightly held above blanket. No movement or change of expression on questioning. Lips set. Sometimes showed contrary response on questioning.

Time P.M.	Pulse per min.	Resp. per min.	Systolic Blood Press.	Remarks
2:45	90	18	130	Under "normal" conditions.
2:48	90	24	130	Mask applied to face; breathing air.
2:49	90	0	140	Breathing mixture of 25% CO ₂ and 75% O. Stopped breathing as mixture was turned on.
2:50	100	30	168	Deep and violent respiration; eyes open with frightened look; moving left arm and left leg.
2:51	.....	7	205	Pupils dilated; kicking movements of legs. Gas off; breathing air.
2:52	.....	40	170	Violent expirations like escaping steam. Running movements of legs. Expression of fear on face; looks from one to another.
2:53	110	24	140	More quiet; tries to whisper; intelligent expression in eyes.
2:54	.....	20	160	When asked, "Do you know Dr.—?" replies in whisper, "Don't care, don't make any difference."
2:55	.....	36	155	Closes eyes. Arms and head again become cataleptic; returns to condition previous to administration.

TRIAL 2.—V. H. Same subject as in Trial 1. Conditions same as Trial 1.

Time P.M.	Pulse per min.	Resp. per min.	Systolic Blood Press.	Remarks
3:29	114	24	150	
3:30	.....	42	170	Administered 20% CO ₂ 80% O.
3:31	.....	.....	200	Gas off. Violent expirations like escaping steam; dilated pupil; but little muscular activity.
3:32	120	30	160	Catalepsy in arms and head; squeezed eyes tightly shut on being asked to open them. Condition same as before administration.

TRIAL 3.—V. H. Same subject as in Trials 1 and 2.

Time P.M.	Pulse per min.	Resp. per min.	Systolic Blood Press.	Remarks
4:00	135	27	145	Condition same as noted at beginning of first trial.
4:01	135	15	160	Began administration of 30% CO ₂ and 70% O with rapid increase in concentration of CO ₂ as subject began breathing.
4:01½	.....	35	210	Pupil dilated; eyes open. Violent rocking movements and jerking motions of left arm and left leg. Subject holds breath and rolls eyes about.
4:02½	85	Irreg.	.....	Gas off. Pupils normal; eyes open. Running movements of legs.
4:03	.....	Viol. panting	180	Patient shows extreme psychic excitement. Looks rapidly from one member of the group to another with keen intelligent expression on face. No catalepsy present.
4:04	90	50	.....	Patient smiles broadly. Attempts to talk. Replies emphatically, "Yes, sir" to question, "Want some ice cream?" On being asked, "Which is Dr.—?" indicates by smile and turning eyes and head. Similarly recognizes another physician, and continues to answer questions.
4:06	90	20	150	Patient closes eyes; arms fall by gravity but catalepsy returns and patient quickly reverts to condition before administration.

TRIAL 4.—L. I., robust male, twenty-four years old. Diagnosis: Dementia praecox with catalepsy present for one and one-half years. Long history of neurasthenia. Found sitting in chair with mouth drooling; eyes fixed but open, and skin rather flushed. Response to commands, such as "Stand up" or "Lie down," but is mute.

Time P.M.	Pulse per min.	Resp. per min.	Systolic Blood Press.	Remarks
3:10	90	18	134	Face without expression as mask is applied
3:11	93	.....	145	Mixture of 25% CO ₂ and 75% O administered. Respiration becomes very deep and violent. Patient immediately stares about with an intelligent expression; makes violent voluntary movements and pushes mask off, shouting "Take that away."
3:13	96	25	155	Answers "Yes" to question, "Do you know where you are?" Struggling ceases.
3:14	90	25	155	Patient quiet; eyes fixed and face without expression.
3:15	.....	.....	155	Administered 10% CO ₂ and 90% O. Immediately threw mask off with violent movement and nearly jumped out of bed.
3:16	100	30	168	Incoherent efforts to talk, promptly reverting to condition previous to administration.

An attempt later to anesthetize this patient with ethylene before the administration of carbon dioxid was unsuccessful because of the patient's struggles on applying the mask.

TRIAL 5.—I. G., muscular male, age twenty-five. Diagnosis: Catatonic dementia praecox of six months' duration. Lies in bed in catatonic stupor; mute; must be fed; eyes open but staring; muscles partially tensed; skin slightly pale; lips partially cyanotic.

Time P.M.	Pulse per min.	Resp. per min.	Blood Press.	Remarks
1:30	66	18	122/98	Observations made by doctor to whom patient is accustomed. No one else in room.
1:35	70	18	120/94	Observations made with staff in room. Patient looks fearfully from one to another.
1:36	....	....	130/108	Pure oxygen administered from face mask after reassuring word and careful approach of anesthetist
1:37	76	18	130/112	30% CO ₂ , 70% O administered.
1:38	80	20	130/108	Deep powerful respirations; holds muscles rigidly.
1:39	100	....	190/110	Gas off and face mask removed. Patient panting and looking anxiously about.
1:40	140	24	210/110	To question, "How old are you?" answers "Twenty-five." Q. "Do you want more?" A. "No."
1:41	80	....	190/110	Answers rationally to continued questioning. Attempts spontaneous remarks but fails to make himself understood. To question, "Did it hurt?" answers "Just a little." Sticks out tongue on request. To question, "Did your bowels move today?" answers "No, sir."
1:42	80	18	170/120	Muscles become rigid again; patient looks anxiously around. To question "Do you want us to come back?" answers, "Yes, sir."
1:43	80	....	150/106	Continues to look anxiously around but with increasing difficulty.

TRIAL 6.—I. G. Same subject as in Trial 5.

Time P.M.	Pulse per min.	Resp. per min.	Blood Press.	Remarks
2:27	90	30	142/98	Breathing through mask.
2:28	100	....	150/100	Administering 30% CO ₂ and 70% O. Patient holds breath.
2:29	110	38	164/110	Deep respiratory stimulation.
2:29½	120	52	190/110	Mask removed. Patient coughs and laughs. Muscles are relaxed. Attempts to smile.
2:31	124	36	200/130	To question "Feel any better?" emphatically replies, "Yes." Q. "How did that taste?" A. "Not very good." Q. "Make you feel good?" A. "A little."
2:33	100	28	170/110	Patient spontaneously talks: "I was thinking. I have been thinking a lot." Q. "What have you been thinking of?" A. "Of going up." Points to ceiling light and indicates it with eyes. "A bell but doesn't ring. Been thinking why." Continues to respond intelligently to questions.
2:38	72	24	150/100	Patient's complexion becoming pale; muscles more rigid and frightened look comes back into eyes.

TRIAL 7.—G. S., male, age nineteen. Diagnosis: Dementia praecox catatonia, six months' duration. Patient is up and dressed; eyes are open but staring; untidy in dress; mute; muscles rather rigid; eats alone.

Time P.M.	Pulse per min.	Resp. per min.	Blood Press.	Remarks
2:00	78	16	126/96	Observations made by physician to whom patient is accustomed. No one else in room.
2:05	78	16	130/94	Normal observations made after whole group is in room with patient. Patient shows no anxiety or apparent fear.
2:06	74	....	122/92	Administering pure oxygen from mask.
2:07	70	18	126/90	Administering 30% CO ₂ and 70% O.
2:08	90	30	134/100	Deep respirations; skin flushed; pained look in eyes.
2:09	100	38	160/108	Mask removed from face. Patient still breathing deeply. No response to questioning.
2:11	96	20	140/100	No response to continued questioning. Patient sticks out tongue on request but shows no other favorable response.
2:12	80	30	130/106	Administering 30% CO ₂ and 70% O.
2:13	96	30	162/110	Deep respiration; muscles become rigid; protesting look in eyes; mask removed.
2:14	100	38	156/112	To question, "Want any more?" distinctly answers "No." Whispers but cannot make himself understood.
2:16	80	22	148/110	Shakes hands on request and continues to desire to talk.
2:17	76	20	130/100	To question, "Want us to come again?" says distinctly, "Yes." Tries to smile.
2:18	....	20	130/100	Returns to condition previous to administration.

TRIAL 8.—J. B., male, age forty-five. Diagnosis: Catatonic dementia praecox, six months' duration after two-year remission. Patient is up and active; works and plays; feeds himself and generally takes care of himself. Smiles and keeps eyes down on being hailed or questioned and remains absolutely mute. No one at hospital has heard patient utter a word since admission.

Time P.M.	Pulse per min.	Resp. per min.	Blood Press.	Remarks
2:49	76	26	136/74	Patient breathing through mask and blowing in it on request.
2:50	84	28	158/110	30% CO ₂ and 70% O being administered. Breathing deeply.
2:51½	110	30	160/110	Convulsive twitching of neck muscles, patient suddenly relaxing and apparently becoming anesthetized. Mask withdrawn.
2:52	120	28	158	Patient looking around and to question, "Did you like that medicine?" emphatically answers, "Yes."
2:53	100	28	150/96	Patient looks intelligent; nods and shakes head intelligently to questions but no longer says anything. To question, "Want any more?" shakes head vigorously.
2:55	78	26	136/80	No further response except smiling on repeated questioning.

AMIDODOXYL BENZOATE IN THE TREATMENT OF ARTHRITIS*

By J. EDWARD HARBINSON, M. D.
Woodland

DISCUSSION by George C. Hensel, M. D., San Francisco;
George B. Worthington, M. D., San Diego.

YOUNG and Youmans¹ in 1926 were the first to report the use of ammonium ortho-iodoxybenzoate in the treatment of arthritis. Subsequent investigators²⁻¹³ have reported over five hundred cases of arthritis treated by this drug. It is impossible to list these cases in one group on account of the wide variation in terminology and differences in opinion regarding the definition of the terms used, especially in the classification of chronic arthritis. Some investigators classify their cases of chronic arthritis on the basis of etiology, while others list them according to the pathological findings. In some articles both etiology and pathology are taken into consideration in grouping the cases, e. g.: infectious, atrophic, hypertrophic. This lack of universal nomenclature causes confusion in reviewing the literature and in discussing the subject.

Cecil and Archer¹⁴ have adopted the classification of Nichols and Richardson¹⁵ and have divided chronic arthritis into two groups—proliferative and degenerative.

Archer¹⁶ believes that the rheumatoid arthritis of Garrod, the atrophic arthritis of Goldthwaite, the first great group of Ely, and the proliferative arthritis of Nichols and Richardson are different terms which describe the same pathological entity, and probably represent an infectious process. He also believes that the corresponding terms osteoarthritis, hypertrophic arthritis, second great group of Ely, and degenerative arthritis describe the same pathological condition and are probably the result of a noninfectious process. In the proliferative or infectious type the primary change is an inflammatory reaction of the synovial membrane. In the degenerative or noninfectious type the primary change is a degeneration of the joint cartilage.

This classification seems to correspond with the views of those who have made an intensive study of chronic arthritis, and will be used in this report.

PHARMACOLOGICAL ACTION

The pharmacological action of sodium iodoxybenzoate was studied by Loevenhart and Grove¹⁷ in 1911. They found that this substance oxidizes hemoglobin to oxyhemoglobin, and usually causes a more or less marked leukocytosis affecting especially the polymorphonuclear leukocytes. The fall in pressure in the typical cases was usually less marked than the pressure fall caused by iodosobenzoate. Iodoxybenzoate caused a rise of blood pressure in a larger percentage of the cases than did iodosobenzoate. It was not so depressing

on the heart as the latter drug, and an increase in cardiac output was the rule. Even though it may have caused as large an initial fall in blood pressure as iodosobenzoate, the return to normal was more rapid than when the latter drug was administered. They concluded that the fall in blood pressure was not due to cardiac effect. Sodium iodoxybenzoate did not act directly on the vessel wall of an isolated loop of intestine. Before severing the splanchnic nerve the volume of the loop increased while the blood pressure was falling. After cutting the splanchnics, the volume of the loop ran parallel to the blood pressure.

PHYSIOLOGICAL ACTION

The experiments led to the conclusion that the lowering of blood pressure was caused by depression of the vasomotor center rather than direct action on the vessel. They believed that the rise in blood pressure, sometimes seen after administration, was mainly due to increased cardiac output; however, they could not exclude the possibility that, under certain conditions, the salt might stimulate the vasomotor center.

The characteristic effect on respiration was a temporary cessation of respiration entirely independent of blood pressure changes. This effect was sometimes confined only to a decrease in rate and depth of respiration. Evidence of stimulation of respiration was also noted.

Arkin¹⁸ pointed out the bactericidal action *in vitro* of sodium iodoxybenzoate for *B. pyocyaneus*, *B. typhosis*, and *B. Coli*. Toward staphylococcus aureus it was five times less bactericidal than sodium iodosobenzoate.

Proteins did not influence its bactericidal action. Arkin concluded that the bactericidal action was due to the drug's oxidizing properties.

Hektoen¹⁹ found that dogs receiving this substance intravenously produced more antibodies than control animals.

Amberg and Knox²⁰ demonstrated that sodium iodoxybenzoate diminished the intensity of a local allergic reaction. It did not influence the mechanism of the allergic reaction as such, but acted on the inflammatory processes due to products of the allergic reaction.

Arkin²¹ noted the stimulating action of this substance on the phagocytosis of streptococci and staphylococci by human leukocytes in the presence of human serum. He believed that this stimulating effect on phagocytosis was related to the germicidal action of sodium iodoxybenzoate, which is also dependent on the oxygen combined with the iodine in the molecule. Substances which stimulate oxygen production readily stimulate phagocytosis.

Later this same author²² reported the stimulation of production of hemolysin and agglutinin in rabbits when sodium iodoxybenzoate was given intravenously shortly after immunization. Arkin believed that the results showed a close relation-

* From the Department of Medicine, Woodland Clinic, Woodland.

* Read before the General Medicine Section of the California Medical Association at the Fifty-Eighth Annual Session, May 6-9, 1929.

ship between the production of immune bodies (antibodies) and oxidative processes.

Rohdenburg and Reich²³ recently confirmed the germicidal power of sodium iodosobenzoate and sodium iodoxybenzoate.

COMMERCIAL FORMS OF DRUG

Ammonium-ortho-iodoxybenzoate is now available as amiodoxyl benzoate. Before the preparation was accepted by the Council on Pharmacy and Chemistry, we used oxo-ate (Smith, Kline, French). Since its acceptance by the Council, amiodoxyl benzoate (Abbott) has been used. The two preparations gave similar results in all respects. We have given the preparation by the intravenous method exclusively. A preliminary injection of .5 gram was always given to test for hypersensitiveness or idiosyncrasy to the drug. The regular dose was one gram of the substance dissolved in 100 cubic centimeters of sterile physiological saline warmed to body temperature. The solution was used within one hour after being prepared and administered by a 100 cubic centimeter Luer syringe to which was attached rubber tubing about ten inches long, with a suitable glass adapter to fit the needle. The rubber tube and adapter filled with normal saline was attached to the needle after the latter was inserted into the vein, then 100 cubic centimeters of 1 per cent amiodoxyl benzoate was poured into the Luer and the plunger inserted. The rate of flow was regulated by pressure. The usual reaction of the test dose was a slight burning of the tongue and roof of the mouth. Many patients had no reaction of any character with this amount of drug. Occasionally a relatively severe reaction was noted after giving .5 gram. In this instance the next dose was administered cautiously, and the rate of injection modified according to the severity of the symptoms. We have not been able to prognosticate the severity of reaction. Patients complaining of severe symptoms with the test dose often had very little reaction from the full dose, and vice versa.

REACTIONS

After administration of 20 to 30 cubic centimeters of the 100 cubic centimeter solution, patients generally complained of a burning and stinging sensation at the base of the tongue, throat, and roof of the mouth, and burning sensation in the nose and eyes, with lacrimation and watery discharge from the nose. This sensation often spread over the whole body, giving a general sense of warmth with flushing of the face. The taste was usually described as peppery. A few of the patients sneezed, but this was not a usual reaction. Sweating of the face was noted occasionally. The burning sensation and peppery taste have been responsible for the adoption by patients of the nickname "Hot-Shot" as descriptive of the reactions from the treatment. Burning sensation in the epigastrium, and nausea with retching, were the chief symptoms in a few patients. Emesis was rarely observed. Patients rarely complained of sense of weight on the chest or sense of constriction and suffocation. Joint pains were partly alleviated in the majority of patients after the first

treatment. A few patients complained of increased joint pain following treatment. One patient had severe chills about three hours after his fifth injection. Headache was a frequent complaint.

Two patients, who respectively had their tonsils and teeth removed about two months prior to treatment, complained of severe burning pain in the tonsillar area and severe pain at the site of the extracted teeth during the administration of the solution. One patient was given seven one-gram injections and one 1¼-gram injection. There was no complaint of reaction of any character during or following the administration of the drug; nor was there any improvement. It must not be reasoned from this particular case that the beneficial effect of amiodoxyl benzoate is dependent upon the severity of the reaction as is probably true in the treatment of arthritis with nonspecific proteins. A comparison of treatment with dead typhoid vaccine and amiodoxyl benzoate is given by Young.¹³

ADMINISTRATION

Atropin sulphate, grains 1/100, was given twenty minutes before the injection of amiodoxyl benzoate, but did not seem to affect the severity of the reaction. Adrenalin, one-half cubic centimeter, given in the same manner diminished the severity of the reaction in some cases.

Injections were usually given every three days. Lately we have given five patients daily injections of 100 cubic centimeters of the 1 per cent solution for eight days. In two patients reactions were of the usual character and severity. One patient developed cramps, diarrhea, and weakness after the fifth daily one-gram injection. These symptoms did not recur after the following injection. After the fifth injection another patient developed an erythematous rash, without purpura, which subsided in five hours without recurrence. No change in the original complete blood count was noted after the eighth injection. Burning and frequent urination, following treatment, was the chief complaint of another patient whose urine contained a few red blood cells before treatment. There were no subsequent abnormal urinary findings. The progress of the patients given daily treatments was about the same as that made by those who were given the treatment at three-day intervals. We believe that treatments may be given every other day with safety. We would like to reserve opinion on daily injection until further study.

Smith⁶ has advised modification of the dose according to body weight, recommending that those below 110 pounds be given an initial dose of not over .3 gram, and subsequent doses up to .7 gram; while those over 110 pounds should receive an initial dose of .5 gram and subsequent doses of 1 gram.

The average time allowed for injection was about fifteen minutes. If the symptoms of toxicity were marked, more time was allowed for administration. In most patients the severity of the reaction seemed to depend upon the rate of injection; however, this rule did not always hold true. The same patient often complained of

equally severe symptoms from an injection given in fifteen minutes as from an injection given in seven minutes. The severity of the reaction varied in different individuals.

In five instances we gave the 100 cubic centimeter solution in three minutes with no more than the ordinary reaction. This increased rate of injection was attempted in other instances, but was discontinued on account of the severity of the reaction.

We must not forget that a fatality occurring seven hours after the administration of amiodoxyl benzoate has been reported.⁴ The evidence, however, is not conclusive that the drug was responsible for the patient's death. A death twenty-four hours after administration is mentioned by Young and Youmans.

Six or eight injections have constituted a "course" of treatment. We have repeated the "course" in some cases after a two-week interval. No patient has received more than twenty-three injections. Smith⁶ gave thirty-two injections to one patient without apparent harm.

Six injections should be given before deciding that the treatment is of no value in any given case.

Blood pressure readings were taken at ten to fifteen-minute intervals. In from ten to forty-five minutes (average eighteen minutes) there was a marked rise in blood pressure averaging eighteen points. After this time there was a gradual fall in pressure until, at the end of one and one-fourth hours (average) the blood pressure was fourteen points (average) below the reading taken before injection. The blood pressure returned to normal in from two to six hours.

Pulse pressure varied *pari passu* with the blood pressure. A rise in temperature of .5 to 1 degree was occasionally noted. The temperature rose from 100 to 104 degrees following the injection in one patient with acute arthritis. The pulse was usually depressed from 5 to 20 points, returning to normal in from two to four hours. The respiratory rate was seldom affected.

These conclusions agree fairly well with those given by Trauba.¹¹

No trouble was experienced with thrombosis of the veins following treatment. All veins were washed with normal saline, following the injection of amiodoxyl benzoate.

All patients were given physiotherapy in the form of radiant heat, diathermy, massage, and active and passive motion. We believe that physiotherapy, directed by an expert, is a most valuable adjunct to any type of treatment for arthritis. Amiodoxyl benzoate, by relieving pain and muscle spasm especially in the chronic cases, simplifies the task of the physiotherapist in obtaining early active and passive motion. All probable foci of infection were eliminated in the patients with infectious arthritis before treatment with amiodoxyl benzoate.

We should be very conservative in the elimination of possible foci of infection in patients suffer-

ing from the degenerative type of arthritis, as a true focus of infection is rarely demonstrable.

Treatment of joint pain should not be the only consideration in advising a regimen for arthritis, especially of the degenerative type. Diet is an important feature of treatment, as these patients are usually overweight. Methods for improving the circulation and elimination are important features in their care. Pemberton²⁴ advises a diet of 30 calories per kilo, with 30 per cent of calories derived from carbohydrates; 10 to 15 per cent from protein; and 40 to 50 per cent from fat, the total caloric intake depending on the individual's weight and previous caloric intake. Decided improvement in metabolism and tissue turgor may be accomplished in patients with a low basal metabolic rate by the administration of thyroid extract.

The quartz mercury lamp is valuable on account of its general tonic effect.

The general use of amiodoxyl benzoate should be limited to patients whose mechanical joint changes are not sufficient to preclude the possibility of improvement in function. To other patients it may be given as a palliative for pain. Gout was considered as a possible diagnosis in all cases, and blood uric acid determinations were always obtained.

In selecting cases for treatment, we cannot expect as favorable results in patients with marked bony changes and deformities as in those with no x-ray evidence of joint disease and little deformity or crippling.

RESULTS OF TREATMENT

In reporting our results we would like to emphasize that each individual was placed on a regimen best suited to his needs and directed particularly toward improving his general physical condition.

Twenty-six patients were treated and sufficient time allowed to judge results, most of the patients being followed for over a year.

For comparison we have listed our results in tables similar to those used by Youmans.¹²

Twenty-six patients have been given a total of 182 injections. The majority have received only one, or less than one course of treatment. The ages vary from 18 to 75; the greatest numbers are found in the age groups 40 to 49 and 50 to 59. The disease was acute in five, and chronic in twenty-one patients. There were thirteen cases of infectious arthritis. Ten of these were of non-specific focal origin. In three the disease was acute, and in seven it was chronic. There were two cases of acute and one of chronic gonorrheal arthritis. There were thirteen cases of degenerative arthritis of which seven were menopausal and six senile. In the acute cases the duration of disease was from five days to two months. In the chronic cases the duration was from nine months to twenty years.

Many factors must be taken into consideration in deciding the degree of improvement. Improvement in one case may mean loss of pain and swelling, while in another it may mean partial or complete restoration of function. If the patient has not been able to climb stairs for months and he

TABLE 1.—Summary of Results

Improvement	No. Cases	Per Cent
Marked	12	46
Moderate	8	31
Slight	4	15
None	2	8
Total	26	100

TABLE 2.—Age of Patients and Relation to Improvement

Age of Patients	No. Cases	Marked	Moderate	Slight	None
10-19	1	1			
20-29	1	1			
30-39	4	3	1		
40-49	6	1	3	1	1
50-59	6	2	1	2	1
60-69	5	3	2		
70-79	3	1	1	1	
	26	12	8	4	2

is able to do so after treatment, he is obviously classed as markedly improved. The estimation of the degree of improvement is relative with each patient and more or less a personal matter with each investigator.

All patients had some disability, varying from pain and swelling to partial ankylosis. Disability limited to pain and swelling was not considered as crippling. Disturbance in function or crippling, varying from muscular spasm to partial ankylosis, was classed as slight, moderate, and severe.

Opinions as to the value of this treatment vary with different investigators. Results cannot be satisfactory if many cases of arthritis with advanced bony and cartilaginous changes are treated, as when treatment is limited to carefully selected cases offering good chances for improvement in function. Other general measures outlined in this paper are important factors in obtaining the best results.

TABLES SHOWING RESULTS

The general results of this treatment are summarized in Table 1. Of the twenty-six patients, twelve, or 46 per cent, were markedly improved; eight, or 31 per cent, were moderately improved; four, or 15 per cent, were slightly improved, and two, or 8 per cent, received no benefit.

Somewhat better results are obtained in the younger patients (Table 2). Twelve patients between the ages of eighteen and forty-nine were treated; ten of these were markedly or moderately improved. However, in the group of fourteen patients over fifty years of age who were treated, ten were markedly or moderately improved.

The degree of deformity or crippling is an important factor in determining the likelihood of

TABLE 3.—Degree of Crippling and Relation to Improvement

Degree of Crippling	No. Cases	Marked	Moderate	Slight	None
None	2	2			
Slight	1		1		
Moderate	10	5	1	2	2
Severe	13	5	6	2	
	26	12	8	4	2

TABLE 4.—Duration of Disease and Relation to Improvement

Duration	No. Cases	Marked	Moderate	Slight	None
Acute	5	4	1		
6 mo.—1 yr.	6	3	2	1	
1-2 yrs.	4	1	2	1	
2-5 yrs.	3	1	1	1	
5-10 yrs.	5	2	1		2
Over 10 yrs.	3	1	1	1	
	26	12	8	4	2

improvement (Table 3). Only two patients in our series had no deformity—both were markedly improved. One with slight crippling was moderately improved. Of the ten with moderate crippling, five, or 50 per cent, were markedly improved; but of the thirteen with severe deformity only five, or 38 per cent, were markedly improved.

In our series of cases, the shorter the duration of the arthritis the greater was the percentage of marked improvement (Table 4). However, of the patients who had the disease from five to twenty years, 38 per cent were markedly improved.

The cases are evenly divided between the proliferative and degenerative types of arthritis (Table 5). In the first-named group of thirteen patients, there was 54 per cent of marked improvement. In the group of thirteen patients with degenerative arthritis, only 38 per cent showed marked improvement. This is a greater per cent of improvement than we expected in this group.

Table 6 shows that seven, or 58 per cent, of the patients who received less than one course of treatment showed marked improvement. Of these, three cases were acute infectious; two were chronic infectious and two were degenerative. Five, or 42 per cent, of those who had one course of treatment showed marked improvement. The two patients who had two courses showed only moderate improvement. Of these, one patient

TABLE 5.—Type of Case and Relation to Improvement

Type of Case	No. Cases	Marked	Moderate	Slight	None
Infectious (Proliferative)					
Acute, non-specific	3	2	1		
Chronic, non-specific	7	2	2	2	1
Acute Gonorrheal ..	2	2			
Chronic Gonorrheal ..	1	1			
Degenerative					
Menopausal	7	3	3	1	
Senile	6	2	2	1	1
	26	12	8	4	2

TABLE 6.—Amount of Treatment and Relation to Improvement

Amount of Treatment	No. Cases	Marked	Moderate	Slight	None
Less than one course	12	7	3	2	
One course	12	5	3	2	2
Two courses	2	2	2		
	26	12	8	4	2

had acute infectious and the other degenerative arthritis.

Amiodoxyl benzoate seems efficacious in the treatment of sciatica. Six patients were given six or more injections of the drug; four showed marked improvement and two showed slight or no improvement.

We are not assuming that amiodoxyl benzoate was wholly responsible for the good results obtained. Physiotherapy, diet, and all general measures instituted, exclusive of removal of foci of infection, may have been important factors, especially in the degenerative type of arthritis. We do not believe that any drug or single therapeutic procedure will accomplish all the desired results. Arthritis is a complex therapeutic problem, and each patient suffering from the disease requires intensive individual study and treatment.

THEORIES REGARDING ACTION

Many theories have been advanced to explain the mode of action of amiodoxyl benzoate. We know that oxidizing agents increase reparative processes and delay destructive processes. Arkin demonstrated the germicidal effect of sodium iodoxybenzoate and its stimulating effect on phagocytosis of staphylococci and streptococci by human leukocytes in the presence of human serum. Rohdenburg and Reich have confirmed the former action. Hektoen noted the increased antibody production in dogs receiving this substance. This stimulation of antibody production was verified by Arkin.

Loevenhart and Grove demonstrated the effect of sodium iodoxybenzoate on an isolated loop of intestine. The dilatation of the blood vessels, they concluded, was dependent on their connection with the nervous system. The fall in blood pressure seemed to be due to depression of the vasomotor center. They believed that the occasional rise of blood pressure was caused mainly by increased cardiac output, although they did not exclude the possibility that, under certain conditions, the salt may have stimulated the vasomotor center. Pemberton and others have investigated the possible relationship between changes in circulation with concomitant delayed removal of sugar and failure of removal of oxygen in normal amounts and the occurrence of arthritis.

Rowntree and Adson^{25 26} have reported one case of severe polyarthritis of the lower extremities in which bilateral lumbar sympathetic ganglionectomy and ramisectomy was done with encouraging results. Leriche²⁷ has noted that trauma of an articular region produced a hyperemic reaction at this level. If the hyperemia persisted for longer than ten days, synovitis with hydro-arthritis occurred, especially if the synovia was of great size. Osseous and cartilaginous changes followed. Sympathetic operations modify the vasomotor condition by decreasing hyperemia, and are very effective in the treatment of traumatic arthritis.

It is not unreasonable to assume that amiodoxyl benzoate may so alter vasomotor conditions as to increase circulation of the joint by capillary dilatation. This latter action, if proven, may be re-

sponsible for some of the good results obtained in the degenerative type of arthritis.

Many patients have spoken of the improved color and increase in warmth of the lower extremities following treatment. In some patients we have noticed that the newly appearing proximal portions of the nails looked normal, while the distal portion was of the "trophic" type.

It would be interesting to determine the surface temperature and transference of heat from the extremities following the administration of amiodoxyl benzoate.

CONCLUSIONS

1. Arthritis is a complex problem which demands individual personal attention as to details of diagnosis and treatment.

2. The elimination of foci of infection, diet, physiotherapy, and special treatment instituted toward improving the patient's general physical condition are important factors in treatment.

3. The uses, dosage, administration and possible action of amiodoxyl benzoate are discussed.

4. The results of the treatment of twenty-six cases of arthritis are reported, and it is suggested that the use of the drug should be limited to those patients whose joint pathology is such that there is a reasonable possibility of improvement in function.

5. Amiodoxyl benzoate may be given as a palliative measure for pain.

Woodland Clinic.

REFERENCES

1. Young, A. G., and Youmans, J. B.: Use of O-Iodoxybenzoic Acid in the Treatment of Infectious Arthritis, *Journ. A. M. A.*, 87: 746-752, September 4, 1926; The Use of O-Iodoxybenzoic Acid in the Treatment of Infectious Arthritis. Section on Pract. of Med. A. M. A., 1926, 192.
2. Young, A. G.: Use of O-Iodoxybenzoic Acid in the Treatment of Chronic Arthritis, *Wisc. Med. Jr.*, 26:346-351, July 1927.
3. Cottrell, J. E.: Treatment of Arthritis with Salts of O-Iodoxybenzoic Acid, *Am. Jr. Med. Sci.*, 174:623, November 1927.
4. Jeffry, R. L., and Burns, K. S.: O-Iodoxybenzoic Acid in the Treatment of Arthritis, *Northwestern Med.*, 26:586-588, December 1927.
5. Manace, B. A.: A Fatality Following the Use of Ammonium Ortho-Iodoxy Benzoate, *Ann. Int. Med.*, 1:825-827, April 1928.
6. Service, W. C.: O-Iodoxybenzoic Acid in the Treatment of Arthritis, *J. Ind. M. A.*, 21:5-12, January 15, 1928.
7. Smith, Millard: Observations on the Treatment of Arthritis with Particular Reference to the Use of Ammonium Ortho-Iodoxy Benzoate, *N. E. J. of M.*, 199:133-139, July 19, 1928.
8. Smith, Millard: The Use and Action of O-Iodoxybenzoic Acid in the Treatment of Arthritis, *Boston Med. and Surg. Jr.*, 196:305-310, February 24, 1927.
9. Smith, Arthur L.: Treatment of Proliferative Arthritis with Ammonium Ortho-Iodoxy Benzoate, *Nebraska M. J.*, 13:204-209, June 1928.
10. Stein, H. C., and Taube, N.: O-Iodoxybenzoic Acid in the Treatment of Infectious Arthritis, *Journ. A. M. A.*, 90:1608-1610, May 19, 1928.

10. Stoner, W. C.: Etiology and Treatment of Chronic Arthritis, *Journ. A. M. A.*, 91:540-542, August 25, 1928.

11. Trauba, N. C.: O-Iodoxybenzoic Acid in the Treatment of Chronic Arthritis, *Journ. A. M. A.*, 89:1124-1128, October 1, 1927.

12. Youmans, J. B.: O-Iodoxybenzoic Acid in the Treatment of Infectious Arthritis. Report of eighty additional cases. *Ann. Int. Med.*, 1:494-505, January 1928.

13. Young, A. G.: A Clinical Study of the Effect of O-Iodoxybenzoic Acid in the Treatment of Arthritis, *New England Jr. Med.*, 199:1194-1201, December 13, 1928.

14. Cecil, R. L., and Archer, B. H.: Classification and Treatment of Chronic Arthritis, *Journ. A. M. A.*, 87:741-746, September 4, 1926.

15. Nichols, E. H., and Richardson, F. L.: Arthritis Deformans, *J. M. Research*, 21:149, 1909.

16. Archer, Benjamin H.: Clinical Aspects of Chronic Arthritis, *Med. Clin. of N. Am.*, 12:659-671, November 1928.

17. Loevenhart, A. S., and Grove, W. E.: Studies on the Pharmacological Action of Oxidizing Substances, *Jr. Pharmacology*, 3:101-130, September 1911.

18. Arkin, A.: On the Antiseptic and Bactericidal Action of the Sodium Salts of Iodobenzoic, Iodosobenzoic and Iodoxybenzoic Acids, *Jr. Pharmacology*, 3:145-154, 1911-1912.

19. Hektoen, L.: The Influence of Sodium Iodoxybenzoate on the Production of Antibodies in Dogs, *Trans. Chicago Path. Soc.*, 8:138-141, 1911.

20. Amberg, G., and Knox, J. H. M.: The Influence of Sodium Iodoxybenzoate and Sodium Cyanide upon an Allergic Reaction of Inflammatory Character, *Jr. Pharmacology*, 3:223-266, October 1911.

21. Arkin, Aaron: The Influence of Certain Oxidizing Agencies (Sodium Iodosobenzoate of Sodium Iodoxybenzoate) on Phagocytosis, *Jr. Infect. Dis.*, 11:427-432, 1912.

22. Arkin, A.: The Influence of an Oxidizing Substance (Sodium Iodoxybenzoate on Immune Reactions), *Jr. Infect. Dis.*, 16:349-360, May 1915.

23. Rohdenburg, G. L., and Reich, Carl: Sodium Salts of Iodosobenzoic and Iodoxybenzoic Acids in Diseases of Bacterial Origin, *Am. Jr. Surg.*, Vol. v (N.S.), No. 4, 321-324.

24. Pemberton, R.: Significance and Use of Diet in the Treatment of Chronic Arthritis, *N. Y. State Jr. Med.*, 26:668-671, 1926.

25. Rowntree, L. G., and Adson, A. W.: Bilateral Lumbar Sympathetic Ganglionectomy and Ramisection, *Journ. A. M. A.*, 88:694-696, March 5, 1927.

26. Rowntree, L. G.: Presentation of a Case of Arthritis, *Proc. of the Staff Meetings of the Mayo Clinic*, Vol. iv, No. 12, p. 91, March 20, 1929.

27. Leriche, R.: The Problem of Osteo-Articular Diseases of Vasomotor Origin, *Jr. Bone and Joint Surg.*, 10:492-500, July 1928.

DISCUSSION

GEORGE C. HENSEL, M. D. (Fitzhugh Building, San Francisco).—Doctor Harbinson has given us a timely discussion of a very useful drug in the treatment of one type of arthritis. His conclusions define its clinical use and value accurately. I am quite in agreement as to its expressed value because of my own experience with the drug and from personal observation of the majority of Doctor Youmans' original series published in 1926.

Amiodoxyl benzoate is more successfully employed in those cases of proliferative arthritis having an infectious origin. Its most favorable influence is seen in that proliferative group determined by genitourinary Neisserian infection. Many of the proliferative, or so-called infectious arthritides are, however, not demonstrably, from either the clinical or experimental sides, an effect of focal infection. The lack of notable

improvement in certain proliferative cases may be explainable on this fact. Though occasional favorable response is obtained with the drug in hypertrophic or degenerative arthritis, such response is little and transient when present, and its general usage is definitely not indicated in this group.

The proper usage of amiodoxyl is, therefore, dependent on accurate recognition of the type of arthritis at hand.

Many reports questioning its value rather clearly demonstrate improper usage of the drug. In several reports there is an evident misunderstanding of the type of case favorably influenced, and the circumstance of its management, as originally defined by Young and Youmans. Doctor Harbinson has again clearly called attention to these two points.

The drug should be used in connection with other therapeutic indications. Its isolated use, or usage under ambulatory conditions promises little more than failure.

The local care of involved joints should be axiomatic in arthritis. The proliferative types with progression lead to crippling and pitiful deformities that only too often must be charged to negligent management. No local curative change is to be expected in the presence of structural changes of synovial membrane, cartilage, or bone.

All Youmans' cases were cared for conjointly with the orthopedic surgeon.

Finally I should like to call attention to its value as a preoperative measure in proliferative cases where surgery is indicated; much after the manner in which Lugol's solution is used preoperatively in cases of hyperplasia of the thyroid gland.

Also the prophylactic use of amiodoxyl in possibly inhibiting progression locally in the joint and, like added involvement of other joints, may be considered a definite indication for usage. Efficiency in this regard is not a matter of certainty at the present time.



GEORGE B. WORTHINGTON, M. D. (902 Medico-Dental Building, San Diego).—Doctor Harbinson has given a very comprehensive and practical résumé of his technique and results of treatment with amiodoxyl in his series of cases of arthritis.

We have used this drug in twenty-seven cases of this disease at the San Diego County General Hospital over a period of more than two years, and feel that, on the whole, our results are somewhat disappointing. Seventeen cases were classified as the proliferative or atrophic type (first great group of Ely), eight were of the degenerative (type 2) form, and two had a quite definite gonorrheal etiology. Our technique was quite similar to that of the author, but in no cases were treatments given daily. Doctor Harbinson's experience with these frequent injections is quite interesting in view of the fact that it demonstrated the comparative lack of toxicity of the drug, even though no particular advantage was apparent from its daily use. The patients were given from one to four courses of six doses each, with an interval of five or six weeks between each course. In those who were improved by this drug, the fourth course produced no marked change for the better. With few exceptions, we noted no severe reactions in any of our cases, and had no fatalities. In one case, a woman of middle age with a moderate hypertension, rather alarming symptoms appeared immediately following the injection, and we feel that the drug should not be given to hypertensives nor to those showing renal impairment or in cases of tuberculosis unless ancient and entirely inactive.

The proliferative cases, especially those of fairly recent origin with very little pathology, showed the most marked improvement, as did those traced to a definite gonorrheal infection. We were gratified with the results in four cases of this group. Alleviation of pain, some lessening of swelling, stiffness and soreness of the

joints, depending on the severity of the process, were noted in the others of this type.

In the hypertrophic cases the results, outside of some temporary increased comfort, were quite discouraging. One cannot expect to influence cases with marked mechanical changes or ankylosis.

All of our cases were given physiotherapy and a diet suited to their needs, with a low carbohydrate intake as suggested by Pemberton in the degenerative form, especially to the obese. Thyroid was often used with benefit in these cases and in those where the menopause was considered to be a factor. There is no doubt that all of these measures must be used if the patient is to be restored to any degree of functional activity, freedom from pain, and the inroads of this most disheartening disease checked. The earlier and more persistently such measures are used the better will be the final results.

All foci should be removed if possible, but this should be done cautiously after the patient's resistance has been built up somewhat, so that he is better able to withstand a flooding of the system with infective material, often leading to a generalization and increase in severity of a comparatively mild arthritis. This has happened on more than one occasion to the discomfiture of the physician. We have noted, on more than one occasion, marked improvement following the cleaning up of pathogenic protozoa in the intestinal tract as advocated by Dr. John V. Barrow and others, and make this a routine procedure where *Ameba histolytica* is found.

Occupational therapy is very beneficial in limbering up stiffened joints. Some of our patients who seemed hopelessly crippled at the start are now able to turn out some excellent articles in tooled leather. This promotes a happier mental attitude and provides a means of livelihood, as well as being of real aid in loosening up the stiffened fingers, wrists, and elbow.

DOCTOR HARBINSON (Closing).—Doctor Worthington does not mention the degree of bony change present in the patients he has treated. The majority of county hospital patients suffering from arthritis usually show very extensive x-ray evidence of arthritis and are not helped appreciably by amiodoxyl benzoate. Results vary according to the selection of cases.

Doctor Hensel has stressed the importance of accurate diagnosis and emphasizes the fact that lack of improvement in certain cases of proliferative arthritis, in which we normally might expect good results, may be due to an erroneous diagnosis.

Possible demonstration of the germicidal effect of amiodoxyl benzoate in one of our patients is evidenced by the x-ray report before treatment which read: "Infectious arthritis of destructive type, involving anterior surface of tibio-astragalar joint, chiefly the tibial surface." One month later, after the patient had received eight injections of amiodoxyl benzoate, and was free from pain, the x-ray report read: "Considerable restitution of joint surface and bone, previously reported as destroyed."

We have been favorably impressed with the value of amiodoxyl benzoate as an adjunct in the treatment of hypertrophic arthritis. Many patients over sixty-five, who have been practically bedridden before treatment, have been free from pain and able to walk with the aid of a cane after treatment. Some of these patients have been observed for over a year. We are not attributing these results to the use of amiodoxyl benzoate alone, but believe that it has been a most valuable aid in the treatment. Patients of this type who were benefited by one course of treatment, but whose symptoms returned were again relieved by another course of treatment.

No promises are made as to results, amiodoxyl benzoate being used strictly as a palliative measure. We are prone to consider that arthritis in these elderly people is a heritage and that "nothing can be done but let the disease run its course." We believe that many of these patients can be relieved for long periods of time by measures suggested in this paper.

PARTIAL GASTRIC RESECTION UNDER LOCAL ANESTHESIA*

By FLOYD F. HATCH, M. D.
Salt Lake City, Utah

THERE is an old medical axiom that the cure must not be worse than the disease. For purposes of analysis and consideration, various features which concern the multiple methods of treatment in diseases of the stomach should be carefully estimated before a surgeon resorts to any radical operative procedure. Surgery of the future will be identified not so much by new processes as by increased finesse in technique. Instruments of greater precision and a preoperative and post-operative regimen that will eliminate a great number of present cases of unnecessary mortality and morbidity will be perfected.

An era of progress is at present being evolved in the treatment of gastro-intestinal lesions based on more accurate diagnosis and preparation of the patient and more skilled surgery. This includes the use of local anesthesia, the choice of appropriate surgical procedure, and a technique featured with gentleness which pays high dividends in lowering the surgical complications of older methods.

INDICATIONS FOR PARTIAL GASTRIC RESECTION

Partial gastric resection is indicated whenever its performance is possible in *carcinoma of the stomach*.¹ Attempted palliative operations are rarely ever beneficial, and gastro-enterostomy should not be done except in the presence of obstruction unless as a first-stage operation to a subsequent and often much easier resection. In this regard a word should be added urging avoidance of incomplete operations, as primary operations often can easily be performed completely with no more risk than an incomplete one, or one intended as a first stage.²

In *certain gastric ulcers* partial gastric resection by one of several methods, each of which has ardent advocates, has its apparent indications according to reports by Balfour, Lewisohn,³ and others in this country. Finsterer,⁴ Von Haberer,⁵ Neuber, and other European surgeons in their recently reported conclusions based on the study of a large number of cases recommend that all gastric and duodenal ulcers be treated without exception by partial gastric resection.

Partial gastrectomy for *chronic gastric ulcer* guarantees the safe, complete removal of the ulcer; removal of multiple ulcers (often overlooked) is assured. This means removal of the "ulcer-bearing" portion of the gastric mucosa, and is the greatest insurance against a recurrence. The danger of cancer following local resection variously estimated at from 2 to 20 per cent is eliminated in cases of malignant degeneration of ulcer, or lesions already carcinomatous; by partial resection. Recurrence of ulcer after a previous pre-

* From the Surgical Section, Intermountain Clinic, Salt Lake City.

* Read before the Salt Lake County Medical Society on September 24, 1928.

liminary operation is certainly an indication that gastric resection offers some permanency of cure.

Estimations of occurrence of marginal ulcers vary from $2\frac{1}{2}$ per cent to the 34 per cent of Berg and Lewisohn. The ulcer-forming tendency of some patients makes this operation to reduce acidity most logical especially if previous operation and medication have failed to produce a cure.

The complicating results of gastro-enterostomy, occurrence of hemorrhage, gastric dilatation, and the vicious circle have not caused the anxiety for improving our operation on the stomach that the complication of marginal ulcer has.⁶

It is advocated by many authorities that small gastric ulcers without wide areas of induration be subjected to simple resection or cautery resection followed by a posterior gastro-enterostomy, while partial gastric resection or pylorotomy be reserved for larger indurated ulcers in which the possibility of a malignant change is present.⁷

The cause of gastric and duodenal ulcers is unknown. Their presence constitutes a danger from perforation, hemorrhage, cancerous degeneration, etc. It would appear that resection of ulcers not cured by medication is just and indicated, giving no guarantee thereby that they may not recur.

Perhaps focal infections involving damage to the vascular supply of the lesser curve and duodenum through the right gastric artery and secondary injury to the devitalized mucosa from resulting hyperacidity play an important rôle in etiology.

Surgery is not indicated in acute cases or short duration cases not having had a good regimen of medical therapy.

In *high ulcers of the lesser curve*, gastro-enterostomy is the ideal operation for relief of symptoms, but danger of a carcinomatous ulcer, as in a young man in our series recently, makes resection indicated if possible. In *acute perforations*, *marked stenosis* and *most ulcers of the stomach of penetrating type*, there is an agreement for surgical treatment. Each case must be treated with individual consideration, and probably neither medicine nor surgery will cure 100 per cent until we understand etiology thoroughly.⁸

Perhaps an outline of surgical treatment in cases of gastric and duodenal ulcers will be more unanimously followed when end-result statistical and follow-up studies of large numbers of cases have been correlated and reviewed by the profession.⁹

In duodenal ulcer the majority of American surgeons are convinced that the results attained by local resection or cautery destruction (Balfour) followed by posterior gastro-enterostomy accomplishes a high percentage of cures, with only a rare gastro-jejunal ulcer as a late complication. Individual exceptions to this procedure are found in the pyloroplasty of Finney, modified pylorotomy of Horsley and Mayo, etc.

The summation of opinion of American surgeons is against the procedure of partial resection of the stomach for duodenal ulcer as practiced by



Fig. 1.—Multiple ulcers of stomach and duodenum

a large number of leading European surgeons and not a few leading men in our own country, particularly Berg and Lewisohn of Mount Sinai Hospital, New York.

AVOIDANCE OF COMPLICATIONS

The estimation of 50 per cent of the mortality in upper abdominal operations due to pulmonary complications argues intensively for use of local anesthesia and painstaking preoperative and postoperative care to eliminate these and other possible causative factors. The associated use of local anesthesia as abdominal wall field block and splanchnic plexus infiltration block is recommended by many doing this work as a most valuable adjunct in preventing shock, minimizing postoperative pulmonary complications and otherwise guarding already serious operative risks from the depressing effects of a general anesthetic. These satisfactory results are further increased by the use of a technique which demands gentle handling of tissues, thus allowing a painless and non-shock-producing operation. On occasions use of nitrous oxid or ethylene may wisely support the finish of work begun under local anesthesia.

Many justly termed "puttering operations" are still being performed which locally resect or cauterize, often only in part, a large callous ulcer of the stomach which perhaps has already taken on carcinomatous change. Not always is a posterior gastro-enterostomy done in these cases as an adjunctive procedure; and the final result, with recurrence of the lesion, formation of another ulcer, hour-glass constriction or improper emptying of the stomach, leaves the patient in a condition more aggravated than before.

For some time past the stomach work of Finsterer, Neuber, and others of the central European

school, with its low mortality and freedom from serious complications, has held much attention. An analysis of their results may be summed up as a lowered mortality through use of local anesthesia, entirely, in their cases; gentle handling of tissue; the performance of a standard resection sufficiently radical to widely remove the ulcer-bearing area; and the making of a gastro-intestinal stoma which allows free, prompt gastric emptying.

No surgeon of today can claim for himself the entire credit for perfection of any particular procedure in gastric resection, for to the great Billroth himself must original praise be given, and only for additions and amplifications of his methods can individuals claim originality.

RESULTS OF FINESSE

Finesse in technique should be the aim of all who attempt to qualify in bettering the results of surgery in this field.

In my experience a resection operation often necessarily prolonged in time meets with no pain, no shock, no fall in blood pressure, and no increase in pulse rate when the local anesthetic is properly administered and appropriate technique in handling tissue is observed. There is no forcing out of the abdominal content at any time during the operation, and closure is for this reason manifestly simple and easily performed without trauma.

Postoperative recovery, following these precautionary measures, is striking in the entire absence of nausea and vomiting, thus facilitating early retention of liquids if the surgeon chooses to prescribe them. With the absence of the depression caused by any general anesthetic, the patients make a more rapid recovery, particularly noticeable in the first few days, during which time they are quite themselves except for some abdominal wall pain.

Pulmonary complications, so prominent in the statistics of all upper abdominal operations under general anesthetics, are conspicuous by their relative infrequency.

DESCRIPTION OF METHOD USED

The method which I have followed recently is a modification of the technique of Professor Neuber¹⁰ of Budapest. Preliminary hypodermic injection of one-quarter grain morphin sulphate or morphin and hyoscin may be given. The abdominal wall field block is generously infiltrated with one-half of one per cent novocain in a diamond shape on the upper abdomen, so that an incision through either rectus or in midline is permitted.

After the peritoneum is opened the wall on either side is elevated gently and a transperitoneal injection is made around the whole wound so that the peritoneum will be insensitive in proximity to the wound edges and will not be irritated by necessary manipulations of exploration and operation.

A casual exploration can be made of the stomach, duodenum, and gall bladder if traction on the viscera is avoided and the pathologic area can be located before the splanchnic injection is made. If further operation is contraindicated or a patho-

logic condition is not found, splanchnic injection is not necessary.

Splanchnic anesthesia is induced most conveniently by means of a special, long 9 or 10-inch Luer needle with a small 24-gauge point and a 16 or 18-gauge shaft. The point of the index finger locates the vertebral body just above the pancreas through the gastrohepatic omentum. This point corresponds closely to the level of the celiac axis artery, around which are closely woven the fibers of the splanchnic plexus. The finger point separates the vena cava from the pulsating aorta and directs the needle to its position against the vertebra where retroperitoneal injection of 100 cubic centimeters of one-half of one per cent novocain is begun. As the injection proceeds the point is gradually withdrawn approximately one-half inch from the vertebra. Suction is always carefully made by the incompletely filled syringe before injecting to avoid direct injection into the lumen of one of the blood vessels.

Either the abdominal block, the peritoneal injection, or the splanchnic anesthesia may be repeated once or more if desirable in prolonged operations without any undesirable effects. Since a sublethal dose of novocain can be repeated intravenously every twenty minutes for many doses without any unusual effect if injected slowly in experimental animals, I have lost much of my fear of novocain toxicity. Injection directly into a small vessel in man is perhaps the cause of the occasional reaction, with faintness, pallor, drop in blood pressure, etc. I have not personally known of a fatality.

In the case of a carcinoma which can be mobilized and in which there are no obvious metastases beyond immediately adjacent enlarged glands, or in the case of a large indurated ulcer which indicates the advisability of a resection operation or for any other good reason which must be weighed and estimated in each individual case, the first step in the technique which I employ for resection is mobilization of the portion to be removed from the gastrocolic and gastrohepatic omenta.

Painstaking hemostasis is provided by passing a double ligature on a carrier under each vascular segment of omenta and double tying before cutting between ligatures. This accomplished, I have found it time-saving and expedient to use the Petz stapling or sewing clamp to close and double-suture the line of resection. This crushed and sutured area can be immediately grasped after removing the clamp and cut between, releasing the resectable portion down to the duodenum.

The proximal portion is reinforced by interrupted catgut sutures at any point of hemorrhage and then inverted three-fourths of the way down by interrupted linen sutures, as any crushed and sutured blind stomach end would be in any type of resection.

Beyond the pylorus, the duodenum is clamped and tied; the stomach resection portion clamped and cut away. The duodenal stump is then carefully inverted with several layers of mattress sutures doubly reinforced finally by a piece of omentum sewed across. A "no-clamp" gastro-



Fig. 2.—Result of partial resection for conditions shown in Fig. 1

jejunal anastomosis is made transversely by resecting horizontally a sufficient portion of the dependent aspect of the stomach to give a generously wide stoma when completed. A short loop of jejunum is brought through the posterior gastric colic omentum, first suturing this omental layer to the posterior wall of the stomach and the operation proceeded with, much as in any ordinary gastro-enterostomy.

The anterior colic loop of Balfour is used when the remnant of stomach appears too short to make a posterior colic anastomosis advisable, or when the omentum is heavy or thick, making stenosis of the stoma seem possible.

The no-clamp operation is facilitated by use of gastric suction on opening the stomach and jejunum for their approximation. Fine linen is used to reinforce the gastro-intestinal anastomosis in interrupted, closely placed mattress sutures.

Drainage is not indicated when proper precautions and appropriate technique have been observed, except in cases of resection for carcinoma, or a cauterization of an unresected ulcer base on the pancreas or liver.

Deseret Bank Building.

REFERENCES

1. Balfour, D. C.: The Technique of Partial Gastrectomy for Cancer of the Stomach, Surg., Gynec. and Obst., Chicago, May 1927.
2. Balfour, D. C.: Fundamental Principles in Surgery of the Stomach and Duodenum—Report of Four Hundred Cases, Surg., Gynec. and Obst., Chicago, February 1926, 167-171.
3. Lewisohn, R.: The Relation of the Postoperative Achlorhydria to the Cure of Gastric and Duodenal Ulcer, Surg., Gynec. and Obst., Chicago, March 1927, 344-354.

4. Zur Frage der Zweckmaessigen Chirurgischen Behandlung des Magcn Geschwuers und Duodenal Geschwuers, Wein klin. Wchchr., 1924, xxxvii, 719.

5. Von Haberer: Anwendungsbreite und Vorteile der Magenresektion Billroth, L. Arch. f. klin. Chir., 1920, cxiv, 127.

6. Erdmann, J. F.: The Surgical Consideration of Ulcer of the Duodenum and Stomach, N. Eng. J. Med., 1928, cxcviii, 344-348.

7. Judd, E. S.: Gastric Ulcer, Northwest Med., Seattle, March 1928.

8. Mayo, W. J.: Comments on the Surgical Treatment of Gastric and Duodenal Ulcer, Quincy Med. Bull., 1927.

9. Crile, G. W.: Surgery of the Stomach and Duodenum, J. Am. M. Ass., Chicago, 1925, lxxxv, 1625-1628.

10. Neuber, Ernest: Technique of Gastric Resection, Surg., Gynec. and Obst., Chicago, August 1927, 204-208.

A GOITER SURVEY OF THE HIGH SCHOOL STUDENTS OF CONTRA COSTA COUNTY, CALIFORNIA*

By H. LISSER, M. D.

H. CLARE SHEPARDSON, M. D.

San Francisco

AND

RACHEL K. MILLER, R. N.

Martinez

IN November 1926 an invitation was extended to one of us to conduct a goiter survey of the school children of Contra Costa County. After consultation with Miss Rachel K. Miller, county school nurse, it was agreed that an examination of only the high school students of the county would include the age period when endemic goiter is apparent and that the results of such a survey could reasonably be expected to afford a fair index of the incidence of endemic goiter in Contra Costa County. Before proceeding farther the approval of such a survey was requested of the Contra Costa County Medical Society. At a meeting held January 29, 1927, the cordial endorsement of that organization was placed upon their minutes. It was pointed out by us that our purpose would be to ascertain the frequency of goiter in the various high schools of the county, and that when a case of thyroid enlargement was found the school nurse would notify the parents of the child with the suggestion that the family physician be consulted for further advice and possible treatment.

SURVEY PROCEDURE

The actual survey was conducted during March and April of 1927. There are ten high schools in the county, including two Junior high schools. The county is a fairly large one and the location of the schools can be noted from the accompanying map (Fig. 1). The method of procedure, which worked out very expeditiously, was as follows: In advance of our coming the students in each school filled out a card (Chart 1). Upon our arrival the boys and girls were formed in

* Read in part before the Contra Costa County Medical Society on October 13, 1928.

CHART 1.—*Questionnaire for Special Survey*

CONTRA COSTA COUNTY HIGH SCHOOL		
Name	Age	Date
	Sex	
Residence (street or road)	Elem. School Dist.	
High School		
Birthplace		
Places of residence (city or state)		
Date of coming to present location:		

separate lines. Each line passed by a physician, there being two of us. The neck had been bared to permit of ready inspection and palpation. All students who were thought to have goiter, or concerning whom there was any doubt as to the question of thyroid enlargement, were asked to step aside to await more thorough examination. The negative cases were immediately dismissed. Those who had been detained for further and more careful examination responded to queries which were recorded by our secretary, and by the county nurse, on the accompanying questionnaire (Chart 2). Although all of the questions enumerated were asked and answered, the information derived from many of them was not significant enough to warrant further comment, consequently no reference to many of them will be found in the remarks that follow. Thereupon they returned to the physician for final decision as to the presence of goiter. The findings were recorded on an examination blank (Chart 3). A glance at both the questionnaire and the examination blank will disclose that all necessary data for the differential diagnosis of goiter were thus conveniently obtained, and without requiring disrobing. At this point it is proper, and a pleasure, to acknowledge the courteous coöperation of the principals and teachers of all the high schools visited, as a result of which large groups of students were satisfactorily handled with a maximum of speed consistent with accuracy.

Before proceeding to summarize the results and discuss their interpretation, it might be well to mention that other physicians conducting a similar survey might have found a higher incidence than we did. We are led to this supposition by reason of the widespread custom of recording "thyroid palpable" in routine physical examinations, as if this were a noteworthy finding. In our experience the overwhelming majority of normally sized thyroid glands are palpable (at any rate the isthmus and lower poles) and that accordingly there is no object in mentioning this fact, whereas a thyroid which is *not* palpable is ordinarily an abnormal and distinctly noteworthy condition. Be this as it may, and admitting that there is legitimate room for difference of opinion as to when a thyroid is large enough to be called a goiter, we are inclined to believe that any errors in our figures will tend to be in the direction of conservatism.

The statistics of the survey have been summarized in a table (Chart 4). Comparison of the two columns showing the number of *pupils examined*

in contrast to the number of *pupils registered* in each school, demonstrate that only a very small percentage (5 per cent) failed to report for examination. It is justifiable to conclude, therefore, that the incidence of goiter found was a fairly accurate index of actual conditions.

COMPARISON OF CONTRA COSTA COUNTY
FIGURES

Of the 3504 pupils examined, 85, or 2.42 per cent, were found to have goiter. This represents an incidence of twenty-four per thousand for the county. That this constitutes a low frequency may be deduced by a consideration of the statistics from areas where goiter is truly endemic. For instance, Kerr (1919) found among the Alaskan Indians definite enlargement of the thyroid in 10.6 per cent of 310 students examined. Hercus, Benson, and Carter (1925) report a goiter incidence of 31 per cent in the school children of New Zealand. Marine and Kimball in their important study of goiter prophylaxis state that of 2305 school children in Akron, Ohio, who did not take iodine, 495, or 21.4 per cent, developed goiter. It is stated that 59 per cent of the school children in the commune of Rapperswill were goitrous (1885); after the introduction of water from a nongoitrous region, this percentage, by 1907, had dropped to 2.5 per cent. Klinger (1921) found the goiter incidence in the school children of Zurich to vary from 82 to 95 per cent. Incidentally it may be mentioned that Marine found 90 per cent of street dogs of Cleveland to be goitrous. Adami speaks of French Canadian villages in which scarcely a family is to be found that has not one member or more who is goitrous. These figures are introduced to serve as a basis for comparison. It may occasion surprise that even twenty-four per thousand should occur in a county bordering partly on Suisun Bay and not far from the ocean. In this connection it is interesting to note that Duncan (1905) presents similar figures; twenty per thousand in Macabebe, near Manila Bay, only a few feet above sea level.

Coming back to the Contra Costa County survey, it was found that only one-half the percentage of goiter occurred in Richmond as compared with the rest of the county. The figures are these: twenty-eight goiters out of 1842 students examined in Richmond (1.5 per cent), in contrast to fifty-seven goiters out of 1652 students (3.4 per cent) examined in the remaining high schools of Contra Costa County.

Some 1804 girls were examined as compared with 1528 boys. There were accordingly only 8 per cent more girls than boys. However, of the 85 goiters found, 75, or 88.3 per cent, occurred in girls, whereas only 10, or 11.7 per cent, occurred in boys, a ratio of 7½ to 1. This agrees with figures elsewhere. Some writers claim that goiter exists eight times in females to once in the male, but such a ratio is more apt to occur where goiter is relatively infrequent. DeQuervain found the ratio 3 to 1 in favor of females in Switzerland, where goiter is exceptionally common, but on approaching an intense endemic focus the number of males affected more nearly approxi-

mate the number of females; 1.6 to 1 in Berne. Analyzing the sex statistics still further, of the 1528 boys, .65 per cent had goiter (6.5 per thousand), whereas of the 1804 girls examined, 4.15 per cent (or 41½ per thousand) had goiter.

BIRTHPLACE AND RESIDENCE FACTORS

An attempt was made to ascertain the influence of birthplace, and length of residence in Contra Costa County, upon those who had goiter. It is difficult to form very positive conclusions on these points, but this much may be stated—of the eighty-five pupils who were found to be goitrous, sixteen were born in Contra Costa County and had always lived there; twenty-four were born in California, not in Contra Costa County, but had lived in that county an average of 5.3 years, including a range of one-half to twelve years' residence. Of these, thirteen of the twenty-four had lived in Contra Costa County five or more years. The remaining forty-three goitrous students were born outside of California, but had lived in Contra Costa County an average of 2.9 years, including a similar range of one-half to twelve years; eight of these forty-five resided in Contra Costa County five or more years. Therefore, in formulating conclusions as to the frequency of goiter in Contra Costa County the striking fact must be taken into consideration that forty-five of the eighty-five goiters found in the high school children origi-

nated, in all probability, outside of California. A detailed study of these forty-five cases indicates that in almost every instance they migrated from states or foreign countries where goiters are known to be prevalent. A goodly number came from British Columbia, Oregon, Washington, Idaho, and Montana; another group from the Great Lakes region; and a few from the mountainous portions of Germany, Austria, and Italy. In this connection attention may be called to the study made in 1926 by Dr. Ruby Cunningham among women students of the University of California. She found, of 7320 women students entering that university during a five-year period, 1361 or 18.6 per cent had enlargement of the thyroid gland; 500 of these were more thoroughly studied; 337 of these 500 were born in other countries or states, and of the students with abnormal thyroids coming from other states 177, or 17.4 per cent, had resided in states or countries in which the goiter incidence is high. Of 2341 students registering from California 245, or 10.5 per cent, showed thyroid enlargement. These figures concerning older girls residing in a community immediately next to Contra Costa County prove still further how low the goiter incidence is in Contra Costa County itself.

The following data are obtained when inquiry is made into the relationship of sex and goiter

CHART 2.—Questionnaire for Students With Enlarged Thyroids

CONTRA COSTA COUNTY			
1. Name Age:..... Sex:..... Date:.....			
2. Address: (Give name of street or road, and elementary school district).....			
3. Places of residence with water supply:			
Date (Year Only)	City	County and State	Water Supply (Public, Private, Spring, Well, River, Lake)
.....
.....
.....
.....
.....
4. Have other members of your family enlarged thyroids, or unusual fullness of the neck?.....			
Enumerate:			
5. At what age did you, or any one else, first notice an enlargement of your thyroid?.....			
6. Has the enlargement remained stationary, increased or decreased?.....			
7. Has the change in size been gradual, or sudden?.....			
8. If a change in size occurred suddenly, state the age at which it occurred.....			
9. (For girls): Age of onset of catamenia:.....If abnormal in amount or interval, give details:			
10. Have you had treatment for your thyroid?.....If so, state the nature and duration of treatment:.....			
11. Do you use iodized salt, and if so for how long?.....			
12. Do you consider yourself nervous?.....If so, in what way:			
Sleeplessness:..... Tendency to worry:..... Irritability:.....			
13. Have you lost or gained weight since appearance of goiter?.....			
How much?			
14. Have your eyes become more prominent than they used to be?.....			

incidence to birthplace and period of residence outside of Contra Costa County:

Girls		Goiters
Born in Contra Costa County.....	593	18
Born in California, but outside of Contra Costa County.....	567	18
Born outside of California.....	557	39
Boys		
Born in Contra Costa County.....	532	2
Born in California, but outside of Contra Costa County.....	485	2
Born outside of California.....	430	6

These figures disclose that we are dealing with fairly equal groups of boys and girls and, furthermore, fairly equal groups as far as birthplace is concerned. Although the total number of goiters in each group is too small for any far-reaching conclusions, it would seem, as pointed out before in the consideration of the sex ratio, that there are relatively more boys with goiter who were born in recognized goiter areas; in other words, nine girls to one boy in the groups born in Contra Costa County and also in the groups born elsewhere in California, but only six girls to one boy in the groups of girls and boys born outside of California, where goiter is more frequent.

INCIDENCE IN DIFFERENT SCHOOLS

Studying the statistics summarized in Chart 4 from still another angle, we find what may be a significant discovery. Although the average percentage of goiter found throughout the high schools of Contra Costa County was only 2.42 per cent, a study of the percentages for each school district reveals that this percentage varied from zero in Crockett and 1.3 in Richmond and Pittsburg, to 5.2 and 5.8 in Martinez and Antioch, provided one leaves out of consideration the one notable exception, namely, the San Ramon Valley High School located in Danville. Reference to the chart discloses the striking fact that eleven of the eighty-five goiters were discovered in this school.

CHART 3.—*Examination of Students With Enlarged Thyroids*

Name:			
1. Appearance of Students:			
Normal:	Thin:	Short:	
Toxic:	Obese:	Tall:	
2. Skin: Moist: Smooth: Warm.			
Dry: Rough: Cold:			
3. Eyes: Exophthalmus:			
Thyroid eye signs:			
4. Tremor: Of protruded tongue:			
Of extremities:			
5. Heart: Rate:		Rhythm:	
Type of sounds:			
6. Thyroid Gland:			
Type of Enlargement	Colloid	Symmetrical	
Thrill	Adenomata—R. Lobe		
	L. Lobe		
Bruit	Isthmus		

Of 101 registered students in this school, eighty-seven were examined; of these 87, 11 or 12.6 per cent had goiter. Of these 11, only one was born outside of California, he spending eight years in Philadelphia, eight years in Oregon, and the last three years at Danville; in all likelihood his goiter originated outside of Contra Costa County. Four of the goitrous students lived their entire lives in the San Ramon Valley High School District. The remaining six were born in California, outside of Contra Costa County. They spent an average of 6.8 years in Contra Costa County (the puberty years); two spending the last five years there; three residing there the last eight, ten, and twelve years, respectively, while one goitrous student spent only a year in the district. It may be reasonably concluded, therefore, that the Walnut Creek-Danville district can be held responsible for nine of the eleven goiters found. In other words, among the school children in this district there would seem to be a goiter incidence of about 10 per cent.

SOURCE OF DRINKING WATER

In the last column of the table (Chart 4) will be found notations concerning the source of drinking water in the respective high school districts. The drinking water used by the children attending the San Ramon Valley High School comes partly from private wells. We were hardly in a position to make any extensive investigation of the geological relations throughout the entire county. However, in view of the relatively high incidence of goiter in the San Ramon Valley High School District (at least as compared with the remainder of the county) it was thought desirable, if possible, to obtain some authoritative information with regard to the sources of drinking water in this district. To this end the advice and coöperation of Professor George D. Lauderback, professor of the geological sciences at the University of California, was enlisted, and the writers at this point desire to express their appreciation of his courtesy and trouble in this connection.

Professor Lauderback examined the source of water utilized by nine of the eleven goitrous students in this district. What follows is in part a copy of his report:

"Although these listed cases are rather widely scattered, and although there is a variety of formations in the general district, I was surprised to find that all of the domestic water supplies occur under very similar geological conditions. They are developed from underground waters that seep into wells and (one spring) from the somewhat pervious layers of the Orinda formation or from an overlying alluvium derived wholly or mostly from the Orinda formation. The distribution of cases is rather striking, from the geological standpoint, in that it follows the peculiar areal extension of the Orinda formation.

"The Orinda formation is of lower Pliocene age, and was deposited under fresh-water conditions, chiefly by streams that flowed down to the east of a dividing ridge or belt of comparatively high land that separated that country from the immediate Pacific coastal belt. The deposits making up this formation are chiefly sandy clays, clayey sandstones, and gravel beds that contain considerable sand and clay in the spaces between the pebbles. Occasionally small amounts of limestone, volcanic tuff, etc., are found.

"The alluvium in these localities is derived wholly or mostly from the Orinda formation, by weathering

CHART 4.—Statistics of the Contra Costa High School Survey

School	No. of Pupils Registered	No. of Pupils Examined	No. of Goiters Found	Percentage of Goiters	No. of boys Examined	No. of boys With Goiter	Percentage of Boys with Goiter	No. of girls Examined	No. of girls With Goiter	Percentage girls With Goiter	Source of Drinking Water
Liberty Union (Brentwood)	169	146	7	4.8	71	0	0	75	7	9.3	Private Wells
Riverview (Antioch)	149	137	8	5.8	51	0	0	86	8	9.3	River, Wells, Rainwater
Pittsburg High School	183	197	4	2.0	89	0	0	108	4	3.7	River
Pittsburg Junior	267	298	4	1.3	137	1	.73	161	3	1.8	River
Mt. Diablo Union (Concord)	382	354	9	2.8	188	1	.53	166	8	4.8	Well water Supplied by Diablo and Port Costa Water Co.
Alhambra Union (Martinez)	294	271	14	5.2	121	1	.83	150	13	8.6	" "
John Swett (Crockett)	206	172	0	0	0	0	0	.....	0	0	" "
San Ramon Valley Union (Danville)	101	87	11	12.6	45	3	6.6	42	8	19.0	All sorts of Drinking water See text
Richmond Union Grades 10-11-12	754	686	9	1.3	337	0	0	349	9	2.6	*East Bay Water Co.
Roosevelt Junior (Richmond) Grades 7, 8, 9	1197	1156	19	1.6	489	4	.82	667	15	2.2	** " "
Total.....	3702	3504	85	Av. 2.42%	1528	10	.65%	1804	75	Av. 4.15%	

*Students in Richmond Schools but residing in Pinole have a separate private supply from wells.

and erosion, and has been deposited in the valley bottoms by the present streams. It sometimes reaches a considerable thickness, and some of the wells do not penetrate through it into the bedrock below. The material of the alluvium is very similar to that of the Orinda, but in a less consolidated or hardened condition, the clay being more plastic.

"The detrital materials of which the Orinda formation and the alluvium are composed were derived from the Coast Range formations, and the water which they contain is either original or derived from the infiltration of local rain water, and has not come through underground channels from distant sources.

"If the condition of the affected pupils is directly the result of the absence of or an exceedingly low content of iodine in the water supplies, the composition and physical condition of the formations may offer an explanation. In both the Orinda formation and the alluvium, even the more open and porous layers which allow of a slow percolation into the wells contain a considerable amount of a soft or plastic clay. This clay was formed and deposited under fresh-water conditions and is colloidal, and would tend to absorb and hold any iodine salts and prevent their passing into the wells or out through springs into the water supply.

"It is also probable that most of these waters are rather hard, a condition common in most of the regions of endemic goiter that I have seen or read of.

"Danville has in part a supply brought in by a local water company. As far as I can learn no cases have developed among pupils using that supply. Your Danville case, No. 3, uses a private well. The company's water comes from high up on a ridge west of Danville at an elevation of probably 1200 or 1300 feet, and from a formation different from those described above. This formation is older (Miocene) and was

originally formed under marine conditions. Its original salt water, at least in the part yielding water to the town supply, must of course have been washed out by percolating rain waters, as the supply is now fresh. The water-bearing strata are more open and much freer of colloidal material than in the Orinda or Orinda-derived alluvial formations.

"I have made the above suggestions as to the possible connection between the mode of occurrence of the water and the cases you reported on the basis of the most distinctive characteristics common to all the water supplies involved. I realize that the evidence so far considered does not constitute a proof. A more extensive study both of cases and of water supplies, including supplies of those not affected by goiter, would be necessary."

Recognizing the importance of obtaining comparative information regarding the sources of water of the nongoitrous students in this locality, one of us (Miss Miller), with the aid of Doctor Clark of the geological department of the University made some further observations. Of the seventy-six nongoitrous girls and boys examined from this district, twenty had resided there less than two years. It was thought unnecessary, for the purposes of this study, to deal further with them since local influences would have been operating for only a relatively short period of time. The remaining fifty-six were investigated.

A summary of the findings disclosed that fifteen students obtained their water from the Orindan or Temescal formations (Doctor Clark was disinclined

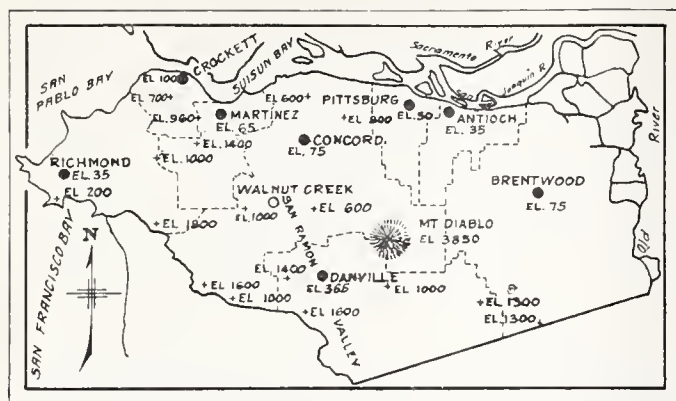


Fig. 1.—Map of Contra Costa County, California

to make any distinction between the Temescal and the Orindan formations, since they are both of fresh-water deposit). Thirteen students received their water from the Danville town supply which, as noted above (by Professor Lauderback), comes from an entirely different formation. Twenty-one students obtained water from private wells which did not originate in either the Orindan or Temescal formations. The remaining seven students used spring water; four of these springs were not from Orindan formation; three students obtained water from the spring on Mount Diablo, which was the source of supply for one of the goitrous students. Unfortunately at the time Professor Lauderback made his investigation, road and weather conditions made this spring inaccessible.

Neither Professor Lauderback nor the writers consider the geological data summarized above sufficiently comprehensive for Contra Costa County as a whole, and perhaps not even for the San Ramon district, to permit of far-reaching conclusions. The findings are nevertheless suggestive. They would seem to indicate that geological conditions exist in the San Ramon neighborhood which are conducive to an iodine-poor water supply, at least for a number of private wells whose water originates in the Orindan formation. To recapitulate: Of eighty-seven students examined from the San Ramon Valley High School District, eleven were found to have goiter. From an analysis of their length of residence in this district, it may reasonably be concluded that nine of the eleven goiters originated there. Of these nine students, eight obtained their water from wells originating in the Orindan formation, whereas only fifteen out of fifty-six nongoitrous students obtained their water from the same source.

TYPES OF GOITERS FOUND

Finally a few words regarding the types of goiters found. All of the eighty-five goiters come under the general classification of diffuse colloid goiter; sixty of these were pure colloid goiters otherwise known as "simple goiter" or "adolescent goiter." Of the remaining twenty-five goiters, sixteen contained adenomata and three of the students in this group showed constitutional evidence of a mild grade of thyrotoxicosis. Nine of the eighty-five goiters were diffuse colloid in type and did not contain adenomata, but gave evidence of hyperplastic change, either locally in the form of thrill or bruit, or by constitutional evidence of hyperthyroidism. Adding the three adenomatous goiters with hyperthyroidism to the nine goiters with mild Graves' disease, gives twelve out of

eighty-five goiters or about 14 per cent, in which there was some evidence of early toxic transformation.

CONCLUSIONS

1. An examination of 3504 high school students in Contra Costa County revealed a decidedly low goiter incidence, namely, 2.42 per cent.

2. However, of the eighty-seven students examined in the San Ramon Valley high school, eleven were found to have goiters, 12.6 per cent. An investigation of the geologic formations from which these students receive their water supply furnished some suggestive information. If a recheck of this district confirms this relatively high incidence it might be wise to institute routine prophylactic iodine therapy, at least for those students who derive their water from private wells. There seems to be no need for such prophylaxis in the remainder of the county.

384 Post Street.

TULAREMIA IN NEVADA*

By J. C. GEIGER, M. D.

AND

K. F. MEYER, Ph. D.

San Francisco

FRANCIS, in a number of papers, has stressed the importance of tularemia from a public health standpoint. The appearance of the disease has been noted in many states. Opportunity has been given the writers to survey the State of Nevada as to the endemicity and, for matter of record, the facts learned are briefly noted.

The simultaneous appearance of six cases of tularemia in the Southern Pacific Hospital at San Francisco, California, from Nevada in August 1928 attracted considerable attention. At the request of Dr. W. B. Coffey, chief surgeon of the Southern Pacific Railroad, and in cooperation with Dr. E. E. Hamer, state health officer, an investigation was made.

EXTENT OF THE INVESTIGATION

The actual area visited was indeed small. However, the area of information covered is considered roughly to be practically the center of the state, to the state lines of California, Oregon, and Utah. One proved case, however, has been seen from the southeastern portion of the state.

NUMBER OF CASES OFFICIALLY REPORTED

Apparently the State Health Department took official notice of tularemia in 1926 and an admirable bulletin by Albert in August 1926 was their first and only publication regarding the presence of tularemia in Nevada. This publication called attention to fifteen cases. The records of proved cases found in the State Hygienic Laboratory at Reno was seventeen in 1926, five in 1927, and fourteen in 1928, a total of thirty-six cases for the period of 1926 to 1928, inclusive. Since then the records of fourteen additional proved cases are available, making fifty in all.

Full information is only obtainable from the proved cases. Of these, forty-two were male and

* From the George Williams Hooper Foundation for Medical Research, University of California, San Francisco.

TABLE 1.—*Proved Cases of Tularemia in Nevada, 1926*

Location	Age	Sex	Type	Diagnosis Proved	Source of Infection	Month Infected
Reno	10	M.	Gland	Yes	Rabbits	June
Lovelock	13	F.	Gland	Yes	Rabbits	June
Gardnerville	50	M.	Gland	Yes	Rabbits	June
Lovelock	13	F.	Ulcer	Yes	Not known (possibly ticks)	June
Reno	44	F.	Ulcer	Yes	Rabbits	June
Wellington	55	M.	Ulcer	Yes	Rabbits	June
Yerington	15	M.	Gland and Ulcer	Yes	Rabbits	June
Reno	50	M.	Gland and Ulcer	Yes	Rabbits	June
Yerington	52	F.	Gland and Ulcer	Yes	Rabbits	June
Reno	50	F.	Gland and Ulcer	Yes	Rabbits	June
Yerington	38	M.	Gland and Ulcer	Yes	Rabbits	June
Reno	40	M.	Gland and Ulcer	Yes	Sheep (butcher burr in thumb)	June
Yerington	42	M.	Gland and Ulcer	Yes	Rabbits	June
Reno	50	M.	Gland and Ulcer	Yes	Handling sheep hides	June
Simpson	41	M.	Gland and Ulcer	Yes	Fly bite	July
Reno	49	M.	Gland and Ulcer	Yes	Rabbits	July
Reno	35	M.	Gland and Ulcer	Yes	Fly bite	July

eight female; only four were children, none under ten years. The source of the infection was attributed to rabbits in thirty-two cases; to tick bites, seven; to fly bites, six; to injuries and probable contact with contaminated material, four; and one to mosquito bites.

PROBABLE INCIDENCE OF THE DISEASE

The officially reported and proved cases (fifty) as often occurs, do not represent the actual incidence. The first cases from our data occurred in Nevada in 1912 near Battle Mountain, and the first proved case occurred in 1926 near Reno. In all, fifteen physicians were interviewed in wide

areas of the state. These can be roughly divided as being situated in western and eastern sections of Nevada. The physicians in the western section speak of cases occurring only from 1926, while those from the eastern section speak of cases occurring from 1912. These physicians (N. A. Paradis, F. H. Harper, Sparks; George Magee, William Edwards, Yerington; Charles Secor, R. P. Roantree, A. J. Hood, John A. Warden, Shaw and Haas, Elko; E. H. Hawkins, S. R. Clark, Battle Mountain; George F. Pope, Charles E. Swezy, E. D. Giroux, Winnemucca) report, on careful questioning, having seen 243 cases

TABLE 2.—*Proved Cases of Tularemia in Nevada, 1927*

Location	Age	Sex	Type	Diagnosis Proved		Profitable Source of Infection	Month Infected
				Agglutination	Animal Inoculation		
Yerington	35	M.	Gland and Ulcer	Yes		Rabbits	June
Yerington	40	M.	Gland and Ulcer	Yes		Rabbits	June
Gardnerville	45	M.	Gland and Ulcer	Yes		Rabbits	June
Yerington	40	M.	Gland and Ulcer	Yes		Rabbits	July
Winnemucca	39	M.	Gland and Ulcer	Yes		Deerfly	August Reported by Drs. Miller and Taussig, University of California Hospital Clinics
Gardnerville	26	M.	Gland and Ulcer	Yes		Rabbits	July

of tularemia, none of which have heretofore been reported. Again, two of these physicians stated that cases had been seen before 1928, but would not venture stating the number. It is decidedly important to note that no deaths are recorded in this series of 243 unofficial, and 50 official and proved cases, or in a total of 293 cases. From these figures one can only conclude that tularemia as a disease in human beings is widespread in Nevada, and has probably existed since 1912. It could be stated, however, that though the disease is endemic the group incidence is low. This is shown in the Shoshone cases. Shoshone is a railroad construction camp of approximately 125 men, all living practically under similar conditions. Two cases only were reported for 1928 from this more or less medically supervised group.

PROBABLE SOURCE OF THE INFECTION OF
THE HUMAN CASES

Since wild rabbits are generally considered the principal animals affected, and the chief source of the disease in man, careful inquiry was made accordingly. The widespread death of rabbits has been universally noted in western Nevada in 1926. Mr. E. R. Sans of the United States Biological Survey indicated that the rabbit mortality ex-

tended into California, Oregon, and Idaho, but not east of Black Rock Desert in Nevada. He stated that the Biological Survey was engaged in active poisoning, and quoted the death of 4500 rabbits on a 300-acre ranch. He considered tularemia an aid to their destruction. His opinion as to the absence of deaths in the rabbit population in eastern Nevada in recent or past years is not borne out by the opinion of local physicians. These physicians point out that the rabbit population recently has been diminished, as it has been in years past, by some form of rabbit disease. They even go so far as to talk about seven-year cycles of increased prevalence of rabbits followed by an increased death rate. It is not unlikely, as the record seems to indicate, that the wild rabbits of Nevada have the disease in chronic form. Many are killed in apparently healthy condition only to cause human cases by contact. In fact, the killing of rabbits and their subsequent shipping for use as food may be a source of danger to the shipper, the transportation company, and the seller and user. Notwithstanding that the great reservoir of infection may be rabbits, ticks, flies, and perhaps mosquitoes, though information regarding mosquitoes is most vague. Such bizarre methods of transmission as dogs licking open

TABLE 3.—*Proved Cases of Tularemia in Nevada, 1928*

Location	Age	Sex	Type	Diagnosis Proved		Probable Source of Infection	Month Infected
				Agglutination	Animal Inoculation		
Winnemucca	40	M.	Gland and Ulcer	Yes		Rabbits	April
Grass Valley	34	M.	Gland and Ulcer	Yes		Tick bite	May
Reno	55	M.	Gland and Ulcer	Yes		Rabbits (Alturas, Calif.)	June
Midas	32	M.	Gland and Ulcer	Yes		Rabbits	June
Reno	18	M.	Gland and Ulcer	Yes		Rabbits (Alturas, Calif.)	June
Ruby Valley	24	M.	Gland and Ulcer	Yes		Rabbits	June
Palisade	37	F.	Gland and Ulcer	Yes		Rabbits	June
Wimberly	32	M.	Gland and Ulcer	Yes		Rabbits	July
Winnemucca	17	M.	Gland and Ulcer	Yes		Deerfly	July
Yerington	40	M.	Gland and Ulcer	Yes		Rabbits	July
Elko	50	M. Indian	Gland and Ulcer	Yes		Rabbits	July
Battle Mountain	50	M.	Gland and Ulcer	Yes		Deerfly	July
Ruby Valley	28	M.	Gland and Ulcer	Yes		Tick bite	July
Ruby Valley	39	F.	Gland and Ulcer	Yes		Deerfly	July
Mound House	30	M.	Gland and Ulcer	Yes		Rabbits	August
Beowawe	31	M.	Gland and Ulcer	Yes		Unknown lesion on foot	August
Pine Valley	10	F.	Gland and Ulcer	Yes		Attributed to mosquito bite	August
Yerington	23	M.	Gland and Ulcer	Yes		Rabbits	August

TABLE 4.—*Proved Cases of Tularemia at Southern Pacific Hospital, San Francisco, 1928*

Location	Age	Sex	Type	Diagnosis Proved		Source of Infection	Month Infected
				Agglutination	Animal Inoculation		
Las Vegas (So. Nevada)	30	M.	Gland and Ulcer	Yes	Yes Culture	Rabbits	June
Sparks	35	M.	Gland and Ulcer	Yes		Deerfly	July
Sparks	40	M.	Gland and Ulcer	Yes	Yes Culture	Tick bite (Alturas, Calif.)	July
Sparks	35	M.	Gland and Ulcer	Yes		Rabbits	July
Reno	24	M.	Gland and Ulcer	Yes		Rabbits	July
Shoshone	30	M.	Gland and Ulcer	Yes		Ticks	August
Shoshone	28	M.	Gland and Ulcer	Yes		Ticks	August
Ellenberg	38	M.	Typhoidal	Yes		Ticks	August
Elko	28	M.	Gland and Ulcer	Yes	Yes	Rabbit Used knife to skin rabbits and later cut finger on knife	September

wounds, coyote pup bites (both dogs and coyotes having been known to have been chasing rabbits), the wiping of hay knives on machines after cutting through and into rabbits nesting in the hay, barbed-wire cuts, the handling or shearing of sheep, have been noted in our series of cases. In addition, and of what importance, we do not as yet know, one patient only handled turkeys dead from an unknown disease. In our data there is recorded the death of one hundred chickens owned by a physician who fed them rabbit meat and liver. This physician's wife was seen with tularemia, probably from handling the rabbits fed to the chickens, but no examination was made of the chickens.

COMMENT

Tularemia has probably been endemic in Nevada since 1912. There appears to be every type of transmission—rabbits, flies, ticks, contact with other animals apparently healthy such as dogs, coyotes, and sheep, and with such extraneous material as knife blades and barbed-wire. However, no cases have been noted in this series as being due to contact with human cases. The question of immunity of the Indians of Nevada was continually brought to the fore. There is a record of one proved case in a Piute, and other cases have been seen in the Shoshones. It could be stated that, though the wild rabbits have always been a source of meat for the Indians in Nevada, the cases of tularemia in them are rare, or that the Indian is or has become wiser than his white brother. The endemicity of tularemia in the human depends on the disease in the rabbit and the infected blood-sucking insect population of the district. It would appear that in Nevada both of these factors are unusually and definitely present. The mortality rate in the human cases in Nevada, however, has been nil, but final recovery has been exceedingly slow.

Every variety of treatment was suggested as efficacious, but methods such as mercurochrome

intravenously, salvarsan intravenously, the use of phenol as a counterirritant in glandular cases, the use of acid mercuric nitrate and arsenical paste as a cautery agent applied to the initial lesion, and the use of the ultra-violet lamp, seem to indicate their nonspecificity.

George Williams Hooper Foundation for Medical Research, University of California.

TUBERCULOSIS IN A GENERAL HOSPITAL*

By PHILIP KING BROWN, M. D.
San Francisco

DISCUSSION by Charles L. McFey, M. D., Oakland;
C. E. Atkinson, M. D., Banning.

EMPHASIS in the treatment of tuberculosis was formerly placed on climate and on altitude, and mitigated against care in general hospitals of both medical and surgical tuberculosis. Now, when tuberculosis of bone demands conditions of light and air treatment which formerly seemed the chief consideration in the treatment of pulmonary tuberculosis, and pulmonary tuberculosis is today aided by surgical care in many cases, every hospital must be fully equipped for the fight against tuberculosis in all its phases. The problems presented, individual in every case, are no longer solved by such generalizations as residence in Arizona or Colorado for an indefinite period in some boarding house. It is a question today of accurate diagnosis, supported by the best of x-ray studies, by a complete history and a physical investigation. A survey of the social and economic problems is also in order. Armed with all the facts—the extent and probable duration of the process, the background of resistance which a good history brings to light, a history of complications, concurrent troubles, financial resources, possibility of freedom from worry—the doctor

* Read at the National Tuberculosis Association meeting, 1928, Portland, Oregon.

may select a sanatorium where he can summon to his aid all resources he may need. And among these aids surgical collapse of the lung must be considered.

The chief arguments in favor of an organization such as the American Sanatorium Association are the standardization of care so far as care can be standardized, the evaluation of all new methods proposed, the suppression as far as possible of all low-grade institutions, and of mystic therapeutic measures, and finally the demanding of the profession that only such cases as will be benefited by the care that a sanatorium affords shall be sent away from home. The ideal sanatorium is the place conducted as a home, a school and a hospital. A patient who on initial examination is found to have a unilateral lesion with a cavity three centimeters in diameter presents a totally different problem from one with limited tuberculous pneumonia and beginning softening, or one who has had compression of the lung to stop loss of blood from hemorrhage. It is presumed that no sanatorium has the right to exist today that does not afford patients an opportunity for some of the artificial means of inducing rest, such as pneumothorax. It is presumed also that the x-ray as an adjunct to diagnosis of tuberculous disease and therapy, is absolutely necessary. I do not believe that artificial pneumothorax is a justifiable procedure unless checked by screen or plate. Even the value of postural rest as an aid to cavity closure cannot be judged by physical signs alone. All these aids to diagnosis and progress are available in general hospitals; it is surprising how few who deal with tuberculous patients employ all the means that are recognized as necessary in modern sanatoriums of studying and following up the cases. Even where the x-ray is available many clinicians study only the findings of thermometer, stethoscope, sputum, and scales. It would seem that such incompletely equipped sanatoriums must more closely follow the scheme of the general hospital to obtain ideal conditions; and that the majority of cases of pulmonary tuberculosis shall be treated on the lines of acute illness needing every aid of investigation and treatment rather than depend upon the too lax and insufficient means of most sanatoriums. The old epigram of Pryor is still all too true, "We must treat the tuberculosis patient in the right place and the right way at the right time until he is cured, instead of in the wrong place and wrong time and wrong way until he is dead."

ANESTHESIA AND TUBERCULOSIS

The problem of tuberculosis in a general hospital is well illustrated by the medical and surgical records of the Southern Pacific Hospital. Of 702 admissions for tuberculosis 440 were for tuberculosis of the lung; 52 for lymphadenitis; 26 for tuberculous laryngitis, etc. From a study of the cases admitted to the Southern Pacific Hospital in the last eight and a half years, nearly 10 per cent of the beds had to be set aside for the care of acute and chronic forms of tuberculosis, both medical and surgical. Of the 29,200

admissions, 702 had tuberculosis in some form. It is unfortunate that no record has been kept of the large group of cases sent in on a diagnosis other than tuberculosis who were found on general routine examination to be suffering from that disease also. So important a finding is this, and so impressed have our surgeons become by the uncovering of unsuspected tuberculosis and syphilis in a large group, that operation is more frequently postponed or done under local anesthesia because of questionable lung soundness than because of any heart defect. This is as it should be, for the soundness of the lungs and upper respiratory tract is imperative when general anesthesia is produced, whereas a very great deal of heart damage sufficiently compensated may not be a contraindication. Dr. Chesley Bush, director of Arroyo Sanatorium, the municipal hospital in Alameda County for tuberculosis patients, stated that while he was resident at a private institution with 182 beds, one-fourth of the admissions were of patients who had previously had a general anesthetic, mostly for tonsil removal, within one year. This result of general anesthesia upon incipient tuberculosis should be brought to the attention of all surgeons, so that no patient be sent to the operating room on whom a careful lung examination has not been made. At Arequipa Sanatorium it is our repeated experience that tuberculosis has followed shortly after ether or other general anesthesia. Among 1250 admissions, to date 34, or 2.7 per cent, belong to this group. Sufficient emphasis has not been placed on this important matter. Patients go to their family doctors with complaint of fatigue and slight fever, and are referred to throat specialists to have a tonsillectomy, or the patient himself goes to the throat specialist who, after an inspection of the tonsils, arranges for their removal. These minor operations do the most damage, for they are entered into casually, frequently without any general examination.

In general hospitals patients are apt to get the advice of specialists in every field except in that of tuberculosis. The care of the tuberculous is a specialty and the public has a right to expect every large hospital to furnish the best available advice in every field of medicine. Where no provision is made for diagnosis of tuberculosis, mistakes made are often regrettable. A patient with epigastric pain applied to a surgeon, the head of a staff of a hospital. No history was taken or general examination made, but a gastro-intestinal x-ray study was ordered. The roentgenologist, in screening the patient, observed an obliterated left pleural cavity with a pneumothorax cavity at the top and the heart and mediastinum drawn far to the left. This report was made, and the surgeon ordered sun baths at home. In three weeks diffuse tuberculosis of the right side developed, the direct result probably of the sun exposures. Sun is a powerful remedy, dangerous in pulmonary tuberculosis and never to be used except under the constant supervision of an expert. Fadisms in medicine are nowhere more dangerous than in the treatment of tuberculosis. Advice of quacks over the radio, and the orange juice fast cure-all of the daily press health column, certainly

do great harm to the tuberculous. Another dangerous faddism is exercise. After the fire in San Francisco and the plague infection the ancient county hospital was burned. Temporarily patients were housed about town, and several hundred found refuge in the reconstructed stables of Ingleside race track; among them patients with pulmonary tuberculosis. A well-meaning medical visitor who knew nothing of tuberculosis suggested to the ward of patients with advanced tuberculosis that nothing could be more opportune than the proximity of a perfectly level measured track of a mile, and that instead of resting constantly in bed, they walk the track twice a day. Thirteen tried it. One died of hemorrhage the next day, and within five weeks two more died, not one of whom had seemed *in extremis* before the fatal exercise. These cases are mentioned to show the danger in well meant advice not coming from an expert.

SUMMARY

1. With the progress of our knowledge of tuberculosis we are more increasingly dependent on auxiliary means of securing rest than on tuberculin and climate, valuable as they are.

2. There is no valid reason why tuberculosis patients cannot be treated in a general hospital.

3. A greater familiarity on the part of the profession generally with various forms of tuberculosis and their modern treatment will be invaluable to the great mass of people, and will end in much earlier diagnosis.

4. Too much emphasis has been placed on climate and tuberculin therapy. The absolute neglect of diagnosis and treatment of the disease in general hospitals is the great weakness of our present organized efforts. We have plenty of beds in most places for lung cases, good care when once patients are landed in these beds, but insufficient attention paid to getting them there during the incipient stage when complete cure is most possible. Follow-up of cases is not sufficient. Teaching about tuberculosis in our medical schools needs improvement.

909 Hyde Street.

DISCUSSION

CHARLES L. McVEY, M. D. (Great Western Power Building, Oakland).—1. Should the surgeon examine the patient more carefully before enacting surgery?

Yes. Our faith lies in the future; in the hope that the ambitious surgeon will approach his surgery by way of his medical knowledge. Not more knowledge, but more care in history taking and more complete physical examinations are necessary. We get too busy, and then we get careless. "Of all men in the profession the forty-visits-a-day man is the most to be pitied" (Osler).

2. Should the general hospital make staff provision for a tuberculosis "expert"?

Yes. Especially if he be one who devotes but a portion of his energy to tuberculosis diagnosis and treatment. If he deals with tuberculosis exclusively, he is very apt to see tuberculosis too frequently. Except in rare instances, I believe this to be true.

It is a great help to have such a "modified expert" as a check on one's diagnosis and outline of therapy.

Artificial pneumothorax should be entrusted to him and to no other.

3. Should tuberculosis be treated indefinitely and until its arrest in a general hospital?

No. The main objection to such a plan is that it is impractical unless (and this may be Doctor Brown's idea) a separate and distinct tuberculosis department be set aside in such a hospital. A separate unit might well provide the education, environment, and armamentarium which should be available in tuberculosis sanatoria. The patients of a general hospital come and go. When convalescing, the association of the tuberculous and the nontuberculous would not help the morale of the tuberculous nor aid in the convalescence of the general medical or surgical patient. The tuberculous patient wants to know and see someone who is similarly afflicted, or at least someone who may spend as long a time as he in getting well.

4. Can tuberculosis be diagnosed in a general hospital?

Yes. It may be trite to say that every modern hospital should be equipped with an armamentarium such as is necessary to establish a diagnosis.

5. Are tuberculosis "experts" always expert?

No. And until such time as tuberculosis experts become more expert, and of a purer mold, we will not speak of the food faddists who have carried on their trade from the beginning of medical history. How can a tuberculosis expert in a period of two minutes make a diagnosis of a tuberculous knee-joint? A patient was stripped to the waist on a cold winter's morning, in the open air, and a diagnosis of tuberculosis of the knee-joint was determined by a stethoscope applied to the chest. The case was later shown to have been a simple traumatic bursitis! This example is to offset (in a way to defend) the experience of the surgeon at the Ingleside race track.

6. What of the overcrowded, advertising type of tuberculosis sanatorium—boarding houses?

In agreement with Doctor Brown, should we not be more careful in sending a tuberculous patient away from home, especially to a questionable boarding house, where he receives poor food and too little nursing care and even less plumbing access?

7. What of antipneumococcic-staphylococcic-streptococcic vaccines? What of tuberculin?

There is no scientific background for the indiscriminate use of mixed respiratory vaccines in the treatment of tuberculosis. I refer to the pneumococcic-staphylococcic-streptococcic mixtures now in vogue. These are administered only to make the patient feel that he is receiving a specific to cure his disease. Ignorant of medical therapeutics, the patient believes there is potency in "a shot." Is it legitimate to encourage him in such a delusion? Tuberculin is losing ground. Therapeutically could we not get along very well without it?

~

C. E. ATKINSON, M. D. (Southern Sierras Sanatorium, Banning).—I heartily agree with most of Doctor Brown's conclusions, but ordinarily I do not believe that tuberculosis can be treated to the best advantage in a general hospital, chiefly because the environment and usual location, in or near congested areas, are undesirable. In a general hospital one meets many persons who are misinformed regarding the tuberculosis problem. These include patients, nurses, and physicians, who often indirectly influence those suffering from tuberculosis against taking the cure properly. Often the general atmosphere is decidedly "institutional and cold," and lacking in the friendliness, hope and cheer, which prevail in most well conducted sanatoria.

Yet it is necessary for certain patients to be treated in a general hospital, especially during emergencies

as when thoracoplasty is performed; so the medical personnel should have both adequate training and experience in this line. Sanatoria or hospitals without adequate equipment cannot do full justice to patients, but the most modern equipment is dangerous in the hands of the inexperienced. The diagnosis and treatment of tuberculosis require long experience. The course of tuberculosis is one of years, the average physician does not have opportunity to closely follow many cases to their termination, and may mistake a period of temporary improvement for permanent cure. As temporary improvement is often easily obtained, even in advanced cases, this leads him to doubt the necessity for early diagnosis. Consequently the opportune moment for securing an arrestment with comparative ease is passed by.

Early diagnosis is imperative, but is difficult to make. X-ray examination is highly important, but it is equally important not to rely too completely upon it. The x-ray often fails to register early tuberculosis, and fails to distinguish with accuracy an active from an inactive lesion. Valuable as this agency is, for the expert, it is my contention that those who are not thoroughly familiar with tuberculosis will arrive at a more accurate opinion by paying more attention to the history, symptoms, physical examination, and (bearing in mind that tuberculosis may be present in the absence of bacilli) study of the sputum, and less attention to x-ray evidence. In making an x-ray examination, complete study by means of stereoscopic films and fluoroscopy is advisable. A patient who was slightly run down, recently sought a precautionary examination. The history, physical examination, and x-ray films yielded no definite evidence. On the screen, fluid was at once visualized in the left pleura. More careful scrutiny revealed a partial pneumothorax, which, weighed with other slight findings, led to a diagnosis of tuberculosis. Without screen examination this case would have been missed.

In my experience, tuberculous patients often stand operations surprisingly well, yet the fact remains that surgery for other conditions is often resorted to too hastily and with too little understanding of the patient's entire problem. When border-line tonsils are found a determined effort should be made to ascertain whether these are the main source of toxemia. If the lungs are routinely examined by an expert, many unsuspected cases of tuberculosis will be brought to light and surgery will sometimes be avoided.

✽

DOCTOR BROWN (closing).—I appreciate very much the criticism of this problem of the tuberculosis division in a general hospital as it has been outlined by Doctor McVey. One sees the casual use of the stethoscope over the heart area of a patient about to be anesthetized and it is presumed in each case that the kidney function has been looked into. How many throat specialists are sure that the tonsils they remove, nearly 10 per cent of which are tuberculous, are not tonsils of persons with some trouble in the lung which is likely to be activated by the anesthetic?

If the proper examinations are made in a general hospital a great many cases who enter for surgery that is clearly indicated will be properly treated for their tuberculosis before the surgery if possible and will be operated on if necessary under conditions that minimize the dangers of anesthetics. If the work in the general hospital is well done, it is bound to uncover a great many cases who have not yet complained of the minimum symptoms from which they suffer.

THE HEART*

ITS CONDITION AS A FACTOR OF SURGICAL RISK

By EUGENE S. KILGORE, M. D.
San Francisco

DISCUSSION by John J. Sampson, M. D., San Francisco; R. Manning Clarke, M. D., Los Angeles; W. C. Smallwood, M. D., Long Beach.

IN examining the heart of a candidate for surgery the average physician is preoccupied largely with the detection of murmurs and high systolic blood pressure; and yet these are undoubtedly two of the least important criteria of surgical risk. They do serve to attract attention to a good many subjects with abnormal circulatory apparatus, and should prompt a careful scrutiny, but beyond this they are of little value. Even if we dismiss the large number of murmurs which are functional and consider only those that represent valvular lesions, experience shows that, other things being equal, patients with valvular disease tolerate surgery practically as well as normal subjects. The same may be said of hypertension within reasonable limits, provided other things are equal.

The other things required to be equal, that is, equal to normal, in these cases are: the rest of the body and particularly the myocardium. The pathologically-minded examiner will base practically his entire judgment of risk arising from the circulatory apparatus upon his estimate of the reserve power, endurance and stability of function of the myocardium. His judgment probably will be influenced by valvular or pericardial pathology, but only insofar as it modifies his view of the condition of the myocardium. The mere presence of valve scars will make him suspect that injury occurred to the musculature when the valves were infected, especially if he recognizes the effects of old rheumatic infection; and the extent of valvular deformity and consequent mechanical handicap may to some extent influence his judgment as to the amount of compensatory changes which have occurred and the amount of reserve power available for emergency use.

DIFFICULTIES IN ESTIMATING MYOCARDIAL CAPACITY

The assessment of the virtues of the myocardium presents many difficulties. None of the numerous functional tests thus far suggested have inspired any general confidence among cardiologists, and there are at least three strong theoretical considerations opposed to the hope that any such tests can ever be decisive for gauging surgical risk.

In the first place, the heart is not like the kidney. The latter can be tested by giving it a task at or even far beyond its capacity for the moment; the kidney takes its time to catch up and no harm is done. But any performance test applied to the heart, to be safe, must of course be far below its capacity.

In the second place, the strain to which the heart is subjected during and following surgery

* Read before the San Francisco County Medical Society on August 21, 1928.

is of various sorts. There is the unfavorable position of the body required by certain operations, disturbances due to mental perturbation and the energy expended in struggling during anesthesia, etc.; and more important than these mechanical effects are the chemical ones—the direct effects of anesthetics and their indirect effects on blood gases, especially the hypoxemia so often induced, and later, such factors as the frequent changes in the metabolism of nitrogen, sugar, minerals. Some of these are known to be related to vomiting, or absorption of products from injured tissue. Alkalosis unfortunately results at times from the overuse of alkalis therapeutically. Other chemical changes but dimly understood undoubtedly affect directly or indirectly the circulation, and constitute a tangled skein of causes and effects impossible to imitate in any functional test of the heart.

Finally there is the variety of ways in which heart failure occurs. The congestive type usually receives foremost consideration because it is the most readily predictable, appearing as it usually does to be an exhaustion phenomenon in an obviously crippled heart. More important because less easily predictable are the failures through coronary disease or disordered mechanism of the heart beat—the sort of failures often vaguely termed “acute dilatation of the heart.” It is impossible at present to conceive of any functional test which would reveal a patient's liability to such conditions.

BASIS FOR ESTIMATING MYOCARDIAL CAPACITY

What then is the basis for estimating the ability of the myocardium to withstand surgery? Obviously the judgment is a composite one. Valve lesions should be considered from the point of view of their probable severity, and of the myocardial work hypertrophy and dilatation and diminution of reserve power which have followed. Loudness of murmurs has comparatively little significance for this purpose. More important are modifications of heart size and heart sounds. Thus a clear aortic second sound indicates a comparatively good function of the valve even when there is a loud diastolic murmur. In conjunction with the history, the kind of valve lesion furnishes, as a rule, an indication of the probable etiology and therefore the probable preëxistence of myocardial infection. Mitral disease, especially stenosis, or mitral and aortic disease is usually due to rheumatic infection; and in these cases the myocardium may be assumed to have shared, more or less, in the original infection. Aortic disease alone appearing in adults is usually syphilitic, and always suggests the danger of sudden death from interference with coronary circulation or direct involvement of the musculature.

Blood pressure should also be considered in its relation to the myocardium. Systolic pressure may be high without materially increasing surgical risk if the diastolic pressure and heart size are nearly normal, kidney function good, and effort well tolerated. High diastolic pressure, on the other hand, is an important warning signal, and is usually found associated with cardiac enlargement,

limitation of effort and with other evidences of myocardial impairment.

Disturbances of the heart-beat mechanism implicate the myocardium directly. Simple premature contractions, especially those arising in the ventricle, are in themselves of little moment. Paroxysmal tachycardia, flutter, and auricular fibrillation are usually expressions of myocardial disease; but this may be trivial in amount, and each case must be judged on its own merits. Especially important is the capacity for effort during the abnormal heart action; and if the arrhythmia is paroxysmal, the circumstances if any, which are known to precipitate attacks, and the probability of their occurring during or after operation. Heart-block is usually more serious, but some patients, especially those with long-standing complete block, tolerate effort and surgery remarkably well. Alternation of the pulse in a not very rapidly beating heart is always an ill omen.

The character of the heart sounds is important. One learns to beware of sounds of feeble muscular quality, or certain gallop rhythms suggesting bundle branch block, and of a shortened diastole in comparison with systole.

The x-ray and the electrocardiograph are important aids, usually as confirming clinical impressions already made, but at times supplying the principal evidence of cardiovascular disease. Heart size is an important item; it is indicated often with considerable inaccuracy by percussion and with quite satisfactory accuracy by the orthodiagram or teleroentgenogram. In the electrocardiogram the indication of ventricular preponderance, of conduction deficiency in the bundle or its arborization, deformed T waves, etc., are often found decisive indices of coronary and myocardial disease. Perhaps too much was expected of the electrocardiograph at first. Then when the realization came that this imposing machine alone would not supply a complete heart diagnosis some disappointment was felt, and it was comparatively little used. Now, with the advent of portable and easily operated machines, its use is becoming more general. Some of these smaller machines utilize the original principle of the string galvanometer and produce records fully as reliable as those of the large hospital machines.

This brief survey of technical clinical methods for estimating surgical risks arising from the heart will be disappointing to those who like simple rules of thumb. I intend it to be so, for I do not believe there is or is likely to be found any such rule which is reliable. We should go further and frankly admit that all the laboratory and instrumental methods put together, including auscultation with the stethoscope, are of less value than another and as yet unmentioned part of the clinical examination. It is the exercise of a faculty well recognized and much sought for in medical education and practice, but hard to get or even to name satisfactorily. It is present to a considerable extent in “the man in the street” and is highly developed in many horse traders and athletic trainers who know nothing of medicine. So-called scientific medicine does not develop the

faculty which these experts possess, but on the contrary appears at times to dwarf it. Robert Graves¹ in commenting on the rejection for the British army by medical officers of Jimmy Wilde, the fly-weight boxer, states that he and T. E. Lawrence, about whom there was also some question as to physical fitness, were perhaps the two strongest men in England in 1914—strongest in the sense of being best able to carry on under the handicaps of wounds, broken bones, bacterial and protozoal infections, excessive and prolonged physical effort, starvation, heat, cold, and general hardship.

Throughout the examination to determine surgical risk, and while giving full weight to the results of technical tests, the examiner should nevertheless direct his major effort toward the correct estimation of the general stamina of the patient, both physical and mental. Age should be considered in terms of preservation rather than of years. Bodily habitus, weight, and especially recent weight changes, complexion, texture of skin and muscles and habits of activity, should be noted. Ability to meet comfortably sudden physical strains and endurance tests of ordinary life are especially important.

The wish to die, the conviction of impending disaster or the simple yellow streak are bad omens of varying gravity. Good morale, on the other hand, at times seems to be the deciding favorable factor in a critical situation. I shall never forget a very old, weak-looking woman with brittle arteries, hypertension, myocarditis, and nephritis, who entered the hospital with a ruptured appendix. The surgeon felt that any operation would be hopeless and would add to her discomfort. But when we announced to her our intention of giving medicine to relieve her pain she gave us a piercing look, and said she understood there was pus in the abdomen and that she intended to have it removed and get well. Her determination was rewarded by an entirely successful operation and convalescence.

490 Post Street.

REFERENCE

1. Graves, Robert: "Lawrence and the Arabs," Jonathan Cape, London, 1927.

DISCUSSION

JOHN J. SAMPSON, M. D. (490 Post Street, San Francisco).—Doctor Kilgore has most aptly emphasized the unimportance of valve lesions contrasted to the importance of myocardial pathology as an index of the heart's capacity to withstand surgery. The carefully taken story of either progressive dyspnea or heart pain on exertion is thus of much greater importance than anything that the stethoscope can tell us. Such is not the case in lung disease, and the surgeon cannot be blamed for retaining his respect for abnormal pulmonary signs in modifying his operative technique.

Physical strain, circulatory shock, and mental strain are well recognized by the surgeon, but he generally demands the internist's view on the influence of anesthetics and the choice of anesthetic for the particular case.

Two factors are involved in any general anesthesia: the direct toxic effect of the anesthetic on the heart muscle, and the production of anoxemia or hypoxemia. Perfusion experiments have demonstrated the

direct toxicity, and it is well known that chloroform is especially dangerous for this reason.

Ether, ethylene and nitrous oxid have a low comparative toxicity to their anesthetic qualities.

The effect of anoxemia is twofold: first, the immediate damage to all tissues, heart muscle inclusive, probably from the toxicity of imperfectly oxidized metabolites and certainly from the shift of tissue reaction toward the acid side. Carter and his collaborators have produced auricular ventricular block and aberrant rhythms by acid perfusates; secondly, anoxemia necessitates a greater output of the heart per minute in an attempt to supply the tissue with sufficient oxygen. Such has been shown to throw more load on a heart than is customarily believed.

Nitrous oxid-oxygen anesthesia, while one of choice in pulmonary disease, because of the almost unfailing accompaniment by anoxemia, is not ideally suited to use in heart disease.

It is surprising how well ether and ethylene are borne by patients who are not in extreme congestive failure. This should not surprise us, since their toxicity is low and anoxemia is rarely produced. Ethylene is nearly as free of irritating qualities as nitrous oxid and, therefore, should frequently be the anesthetic of choice, since pulmonary infection so often accompanies heart disease and ether cannot then be used.

Thus, by elimination, the cardiac indications for local anesthesia are few and its use should be determined rather by the surgical requirements of the case and the mental attitude of the patient.

A word relative to cardiovascular treatment of surgical cases. It is my belief that no drug is so often applied worthlessly as is digitalis, during and succeeding surgical operations. Recognition of surgical shock as a phenomenon of the peripheral vascular bed makes the pre- and postoperative use of digitalis in its treatment without rationale. Yet thousands of ampoules are used intramuscularly and intravenously daily in operating rooms. Likewise, the popular delusion that digitalis will slow any rapid pulse is responsible for much waste of this drug. Myocardial failure, either gradual or acute, is its chief indication and when saturation is reached and sustained the results will confirm such use.

Quinidin has not gained sufficient recognition for its value in postoperative cardiac therapy. It is here that paroxysmal auricular fibrillation frequently occurs, as shown in nursing records of periods of rapid, irregular pulse. Quinidin will act specifically on such irregularities, and in the doses necessary for its use here is practically free of any dangerous effects. I believe that the contraindications to quinidin have been greatly exaggerated.



R. MANNING CLARKE, M. D. (319 Hollingsworth Building, Los Angeles).—Nonvalvular heart disease has become the question of the hour with the cardiologist. This may well be so. The surgeon feels his great debt to the pathologist, but the cardiologist may well feel just as big a one, for it is through this source that he has learned the true importance of the cardiac cripple who presented no classical symptoms or signs of "heart disease" as it has been known in the past. The clinician has learned from the necropsy that the dangerous heart disease has been hidden from him more thoroughly than he had realized (therein lies its danger). Thanks to this realization there is arising a more intimate knowledge of the resources of the heart and how they are damaged. Doctor Kilgore's paper on the cardiac surgical risk is a terse, concise setting forth of nonvalvular heart disease and how it may be recognized.

I would like only to mention some things with which I am immensely impressed at the passing moment. First, I do not feel that even yet we are properly impressed with the importance of rheumatic heart disease. I feel that it is wrong to speak of rheumatic endocarditis, for I do not think any such thing exists, as a separate entity. Rheumatic heart disease is a pancarditis and its valve-crippling ability very

poorly expresses to a clinician the basic injury and loss of function suffered by that heart. Doctor Kilgore has set forth in his paper the importance he attaches to a thorough search for the more hidden damage of this and many other similar injuries.

Next I find a great interest just now in the different ways in which an electrocardiogram may suggest to us that the patient has coronary disease, which is, of course, inseparably connected with myocardial disease. Kilgore mentions ventricular preponderance, bundle conduction deficiencies and deformed T waves. I have been following with great interest of late the contention of Herrick, Brooks, and others, that the too rapid lead-off of the down stroke of the R wave is of importance in this respect. So far I am impressed that it is of much importance. Necropsies on cases that have been thoroughly studied will eventually provide us an answer to this and many other important questions.

I wish to agree that oftentimes our complicated system of medical education does dwarf our true perspective of the art of medicine. It is many times true that the great clinician with a broad vision and ability to lead in the field of medicine often comes through his schooling with this faculty in spite of his training, not because of it. We may some day find a better system and curricula than we have at present.



W. C. SMALLWOOD, M. D. (817 Security Building, Long Beach).—Doctor Kilgore has properly emphasized the difficulties of assaying by definite rules the ability of the heart to withstand the strain of surgical operation.

Heart murmurs, in general, have again been cast in a rôle of minor importance, and justly so, for their significance in cardiac prognosis is still much exaggerated by the mass of the profession. Nevertheless the demonstration of a diastolic murmur is a matter of the first moment, calling clearly into mind the existence of definite pathology in which the heart's action as a whole is profoundly concerned. The mechanical disadvantage imposed on the heart by the lesions responsible for these murmurs is usually a considerable one; especially if unusual, sudden, or prolonged strain is to be encountered.

Aortic syphilitic disease, especially if untreated, is a dangerous handicap to a prospective surgical risk; much less dangerous is the well-compensated aortic insufficiency either of rheumatic or sclerotic origin. Mitral stenosis is always a lesion of gravity where surgery must be undertaken, but the risk varies greatly according to the implication and condition of the myocardium.

Patients with hypertension where the diastolic reading is 130 or more, especially if associated with definite renal changes as is most usual, are particularly bad risks and prone to develop sudden and often fatal attacks of pulmonary edema in the first forty-eight hours postoperative.

The electrocardiogram is of distinct value in assisting our judgments, but of the very greatest service in elderly people, where it may bring forth clear-cut evidence of intrinsic cardiac nerve damage, intrinsic cardiac circulatory damage, or marked muscle change, whereas ordinary examination might fail to disclose or barely hint the extent of this portentous pathology. Certainly the estimate of cardiac reserve power in degenerative heart disease is the most difficult problem with which we must deal. The quality of the heart sounds, the appreciation of which cannot be exactly conveyed in words, is of considerable importance to the trained observer. A shortened first sound, a flattening of its timbre, and a weakening or muffling at the apex, contrasted if need be with the first sound at the right sternal border, are not reassuring signs. Careful inquiry as to previous reactions to strain, especially the production of breathlessness on exertion or of pain, oppression, or constriction in the

precordial region or areas of cardiac reference sensation, are danger signals never to be overlooked.

I have been surprised at the ease with which chronic fibrillators meet the strain of a necessary surgical operation. If the fibrillation is associated with mitral stenosis, however, the outlook is considerably more grave.

The dictum so clearly enunciated in this paper, that our estimation of the risk involved in a given case is to be based particularly upon the reserve power of the myocardium, is, I think, the fundamental criterion. This estimate can be approximated, often, unfortunately, with considerable inexactitude, only by a careful weighing of all the evidence at our command. It is in this weighing that experience and soundness of clinical judgment are so important. The whole problem is a difficult integration, and Doctor Kilgore's article is a most thoughtful analysis of its varied features.

THE LURE OF MEDICAL HISTORY

PHARMACY OF THE ANCIENT EGYPTIANS*

A Translation from the Esperanto

By J. VAN BECELAERE, M. D.

San Diego

IN studying pharmacy from the standpoint of concrete historical reliquiae we find a wealth of exact observation and cumulative experience, alongside of stark superstition and miracle-working practices. The history of pharmacy, in the form of documents that hark back to the mythical times of remotest antiquity, rightfully begins in Egypt, a country preserving earliest indications of civilization, culture, and art.

According to historiographers the first Egyptian dynasties date back sixty centuries before our era. Earliest medical writings recorded are of the same period.

The records concerning Egyptian pharmacy are preserved in the so-called "Hermetic books" of Thoth—the Egyptian Hermes—the discoverer of sciences and arts. Only six of these forty-two holy books are of medical import.

A second valuable source of information is found in the papyrus of Ebers, originating in Egypt, and preserved at the University of Leipzig.

The papyrus of Ebers consists of one hundred and ten pages, twenty-two lines to a page, and bears the superscription: "A Book for the Preparation of Medicines for All Parts of the Body." It is dated in the seventeenth century before our era. It prescribes remedies for external and internal diseases, together with formulated prayers and incantations. For example: "Let, therefore, Izodo heal me, as he healed Goro from his pains at the time Seto killed his father Osiris." This quotation refers to the victory of Goro over Seto—the victory of Good over Evil.

Egyptian medical practice was of two orders: (1) The Superior, or Magic, consisting of incantations, prayers for the removal of sortileges, and commentaries on oracles; and (2) the Customary Dogma, or common practice.

Magic Medicine.—This order of practice was the prerogative of the higher clergy, to whom alone was vouchsafed the privilege of studying

* Translated from "Internacia Medicina Revuo," November 1928, pp. 642-644.

the first thirty-six Hermetic books. For the healing of disease these priests enlisted the powers of the Dekans—aerial beings, demons that acted as intermediaries between the gods and mankind, and were endowed with the power of creating vegetables and animals. Thirty-six of these Dekans presided over thirty-six parts of the human body, life and health depending upon their benevolence. Hence there were special formulae for propitiating them, and thus the custom originated in Egypt that they had a special healer for each individual disease, since each part of the body, being subject to a different divinity, required for its healing in time of disease the intervention of a different priest.

Magic medicine, furthermore, was the recognized method of treatment in the holy temples of Izodo, where the sick received during their sleep—in the form of dreams and oracles—the revelation of remedies required for the cure of their condition. The priests of Izodo (Isis?) invoked the healing forces of nature, which they enlisted by arousing a state of profound religious enthusiasm. Hence the essential agencies of a magic cure consisted of prayers and incantations.

Best known among divinities, concerned with the healing of disease were Ptah, his son Hotep—the Egyptian Esculapius, and Thoth, mentioned above.

The clerical caste were held to a strict and ritualistic mode of living which prescribed moderation in all things, extreme cleanliness and bathing, both daily and nocturnal.

Severe hygienic precepts also ruled the entire population, which, in conjunction with excellent climatic conditions prevailing, made of the Egyptians the healthiest among ancient peoples. Thanks to their hygienic mode of living and their knowledge of medicine, the Egyptians came to be highly considered by outlanders, who rated every one of them as being a physician.

Both medicine and pharmacy stood in high regard in Egypt, their physicians practicing numerous specialties. Those concerned with the preparation of medicines were called "pastophoral." There also were "farmakopoloj" (according to the Greek nomenclature)—magicians dealing in secret preparations—and "farmakodikoj," who combined sortileges, incantations, with the use of healing remedies.

Common or Dogmatic Medicine.—This order of practice was in the hands of a lower caste of clergy who were allowed to study but the six last Hermetic books—"Embre"—and held to meticulous observance of the prescribed remedial directions. Noncompliance with the precepts therein contained, at times entailed capital punishment, though when a patient died after treatment strictly conforming with the regulations and directions of Embre, the misfortune entailed no consequences to the practitioner.

Ancient Egyptians were familiar with numerous medicinal products and their various forms of preparation. They regarded opium as a chief remedial agent, as also scilla, and that complex

preparation called "Kyphi," a well-known fumigant prepared in form of aromatic globules.

Formulae for the preparation of fumigants were numerous. Among the best of these was rated a combination of dried-grape wine, galanga root, juniper berries, aromatic calamus, mastix, grapes, and honey.

Various animal and vegetable substances were in general use as medicines. For example, different grains used in bread making, fruit of the cedar, palm wine, beer, honey, vinegar, milk—both human and goat—human urine, the excrement of dogs, cats, lions and crocodiles, beef gall, the fat of all sorts of animals, lizards, for instance. The properties of bitter gall of fish and some of our own modern-day poisons, such as strychnia, were also known.

Among metallic medicines they sometimes employed cerussa—the basic carbonate of lead—as also the crystallized copper acetate.

Juice of the *Corchorus anagallis*—before it came into bloom—was used against the bite of serpents, different skin diseases, and corneal opacities. The juice of this plant was used to effect a dilatation of the pupil, and was recommended in various salves for the improvement of the eyesight.

Erysipelas was treated by frictions with urine of women, and the excrement of donkeys. Against a disease they called "avunes" poultices of ox and bird gall, and the tail of donkeys ground up, in oil, were recommended.

Prescriptions for fever, itch, and even for diseases of the spine were in vogue.

Medicines were exhibited in the form of ointments, plasters, washes for wounds, poultices, enemata, decoctions, and pills. Of pills the Ebers papyrus describes two sorts: those with honey, for women, and those without honey, for men.

During the preparation of medicines (which entailed the observance of meticulous directions) and also before their use, special forms of prayer were spoken.

Egyptians knew more than eighty different sorts of medicinal plants. Absinth, which was called "vulture's heart," was extensively cultivated, as were also *Carthamus*, *Chelidonium*, *Coriander*, *Cyperus esculentus*, *Hyoscyamus*, *Strychnos*, and *Trifolium*. Castor beans, which were called "neter kaka," and specimens of which have been discovered in sarcophagi dating from more than forty centuries before our era, were used internally by the Egyptians. Indigo was well known as a coloring material. From the poppy, opium was prepared; and the city of Syki, around which was conducted an intensive cultivation of the *Papaver somniferum*, was called "Mekone," the city of poppies. The *Crocus orientalis* was called "blood of Ares," and was held in high regard.

Egyptian pharmacy exerted a tremendous influence on that of the Greeks, in fact upon pharmaceutical practice of the entire world. However, from the time when Alexander of Macedonia

brought war to Egypt, and during the reign of the Ptolemies, ancient Egyptian pharmacy gradually gave way to the Greek practice, though for centuries thereafter the city of Alexandria remained a most important center of pharmaceutical development.

625 Broadway.

TRIBUTE TO DOCTOR JOHN F. BINNIE OF SAN DIEGO

CALIFORNIA BIOGRAPHICAL HISTORY

FROM the San Diego *Union* is taken the following:

"Eulogized by no less an authority than Dr. William J. Mayo, as a man who has given his country something more precious than life, Dr. John F. Binnie, noted surgeon whose health was broken in war work and who is an invalid at the naval hospital here, was honored by the California Medical Association at the general meeting of the fifty-eighth annual session at Hotel Coronado.

"The assemblage was a special one and was called the John F. Binnie meeting. Doctor Mayo presided and gave an address in honor of the great surgeon whose life work has been a beacon light to others in his profession. Doctor Binnie's accomplishments were sketched by Doctor Mayo, a fitting tribute by one great surgeon to another. Doctor Mayo said:

"It gives me great pleasure to take a part in this *Festschrifte* in honor of my old friend, Dr. John F. Binnie, whom I have known intimately, inside as well as outside, for more than a quarter of a century and of whose character and work I can speak from personal knowledge.

"John F. Binnie, born in Stirling, Scotland, the son of a Presbyterian minister, had the benefit of the virtues and economies of an austere religion when it was in its glory, but at a time when the kindness and charity of the Man of Galilee, whom we all serve, had perhaps been forgotten.

"Doctor Binnie once told me, in a reminiscent mood, that he remembered as a small boy sitting in the church on the hard seats listening to almost endless discussion of doctrines, and hearing for the first time that Christ was a Jew. When he walked home with his father after the services, he said: "Father, I knew that God was a Presbyterian, but I didn't know that Christ was a Jew."

"The effect of that early religious education can be illustrated by a story that he told me when he returned from the war. He said that the division to which he was surgeon had three chaplains—a Presbyterian, a Methodist, and a Catholic—and that during the tragedies of the war these three men found themselves closely drawn together in their work among the wounded and the dying. When the war was over and they were to separate to go home, the Presbyterian minister, in bidding the others good-by, referred to their mutual work in the division and said: "Little did

I think that the time would ever come that I should meet with a Methodist and with a Catholic on terms of equality, but we have been broadened and we all have been doing the Lord's work, you in your way and I in His way."

"I speak of these things because the qualities that have impressed me most in my association with Doctor Binnie have been his humor, his charity, his loyalty to his friends, and his tolerance.

"Doctor Binnie, educated in Aberdeen, came from the Scottish school of surgery which has always been recognized as the anatomical school, surgery based on anatomy. Nowhere in the world are finer surgical dissections made than in Scotland. France is the only country that has accomplished work in surgical anatomy at all comparable with that done in Scotland. The French have the intuition, the ready marshaling, almost subconsciously, of their knowledge, and the brilliant technique which produced a Pasteur. The German school of surgery is based on pathology, patient study of the minute, industry in gathering together the smallest facts, the school which produced a Virchow. England is distinguished by the school of clinical investigation, the school that produced Richard Bright, Thomas Addison, and Osler.

"John Hunter was a Scotsman trained in England, Lister an Englishman trained in Scotland. Each was an anatomically trained clinical investigator, and marked an epoch in the science and art of surgery.

"Doctor Binnie reads French and German, and has a working knowledge of the literature of Spain and Italy. He has traveled widely. He came to the United States at a fortunate time for us. His great worth as a surgeon and as a teacher was recognized by the American medical profession, and he aided the American school of surgery to become, in the best sense, cosmopolitan. He is an honored member of all the great surgical associations. His words in discussion always have been listened to with respect, and he is beloved personally by the practitioners of our art.

"As a writer Doctor Binnie is seen at his best in his many articles on surgery published in medical journals, and as the author of a great textbook on operative surgery. Written with the precision and clear understanding of Greig Smith (author of a textbook on abdominal surgery), with the judgment and surgical philosophy of Jacobson (author of a textbook on operative surgery), in his own inimitable style, Binnie's "Manual on Operative Surgery" has no equal in present-day literature. In it he has given only brief descriptions of the common operations such as may be found in any standard textbook, but for the proper surgical procedures in little known and rare diseases and conditions and their complications, one turns to Binnie's Operative Surgery with a confidence which is justified.

"When during the Great War the surgeon-general's office asked Doctor Binnie to go abroad to take charge of a surgical division which was having internal dissension and troubles, he went

to the front with magnificent courage and with that tact and tolerance which one would expect from him. The result has been our greater knowledge of war surgery. He returned home, having given that which is more precious than life, his health, for the country in which he was born and the country of his adoption.' "

CLINICAL NOTES, CASE REPORTS AND NEW INSTRUMENTS

AGRANULOCYTIC ANGINA

REPORT OF CASES

By JOHN MARTIN ASKEY, M. D.
Los Angeles

AGRANULOCYTIC angina is a clinical syndrome associated with actual or functional aplasia of the granulocytic centers of the bone marrow. The blood shows a typical dearth of granulocytes. Usually oral lesions are present. Instead of a distinct clinical entity, it has been more recently regarded as a syndrome which may be produced by any myelotoxin acting primarily on the granulocytic centers. In the majority of cases, however, the cause is obscure.

Arsenic poisoning has produced the clinical picture.^{1,2} If the bone marrow involvement affects the red centers and the platelet centers, a rapidly progressive aplastic anemia with bleeding symptoms occurs.³

Duke⁴ considers agranulocytic angina as merely a type of aplastic anemia with selective action on the granulocytic centers, fulminating infection usually causing death before further bone marrow involvement occurs. The anemia of aplastic anemia thus usually does not develop.

We wish to report three cases, of which two recovered, and one progressed to death from an aregenerative anemia.

REPORT OF CASES

CASE 1.—Mrs. H., age forty-one, entered Saint Vincent's Hospital December 4, 1927. For the past year she had not been well, tiring easily. In April 1927 she suffered from bilateral furunculosis of both external ear canals. This finally responded to administration of an autogenous vaccine. While at dinner on Thanksgiving Day she noticed a scratching sensation of the throat. This continued for a week without great pain or discomfort. Dr. William Walters then observed slight erosion of the arytenoid cartilages but no tonsillar or pharyngeal lesions. The next day her temperature rose to 104 degrees, she had a severe chill, and was removed to the hospital. She complained of severe headache, pain in the back, and nausea. Swallowing now was extremely painful, and examination revealed shallow punctate aphthous-like erosions over the tonsils and buccal mucosa. Blood count on December 5 revealed 2.77 million red cells, 1590 white cells, with 34 per cent polynuclear cells and 66 per cent lymphocytes. Urinalysis showed moderate albuminuria and hyaline and granular casts. There was moderate anisocytosis and poikilocytosis. There was no apparent platelet reduction on the smear. The bleeding and clotting time were normal, the clot retracted normally, and the tourniquet test was negative. Blood Wassermann test was negative.

Physically the patient was a frail woman obviously anemic without any petechiae or purpuric spots.

There was no bleeding or oozing of the gums. There were no cervical or inguinal gland enlargements nor was the spleen palpable.

On December 5, her condition being precarious, she was given 500 cc. of 10 per cent glucose solution intravenously. Fever continued between 103 and 104 degrees. On December 9 she was given a direct blood transfusion of 275 cc. without improvement. Again December 11 she was given 300 cc. of blood by direct transfusion. She became worse; the ulcerative lesions involving more of the mouth and lower lip. Smears of the throat had shown no Vincent's spirochetes nor fusiform bacilli. Cultures revealed only a pure culture of *Staphylococcus albus*. Blood cultures had shown no growths.

At noon, December 14, she suddenly became worse, her pulse accelerated and became weak, vomiting came on, which continued throughout the afternoon. In the evening she became stuporous and seemed moribund. The temperature was 102 degrees. The pulse was 130, weak and compressible. The condition seemed hopeless and, as a forlorn hope, adrenalin (10 minims) hypodermically every three hours was ordered. It had been used formerly in a case of aplastic anemia and apparently had stimulated the bone marrow.⁸ Coincidentally, she improved, the temperature the next day was normal, the patient was mentally alert and her vomiting had stopped. The ulcers of the mouth and lip gradually disappeared and were gone by December 19. There was a slight increase in the total white count to 2385, and a relative increase of the granulocytes to 48 per cent. It appeared that the patient was recovering.

On December 21, after a week of normal temperature, she developed a crop of sore, tender nodular lesions on the arms, head and neck, typical of erythema multiforme. Temperature rose to 101 degrees. She developed aching pain in the elbows and knees.

On December 31 she again complained of sore throat, and examination revealed a grayish white membrane over both tonsils. It was a dirty, ragged membrane, differing from the aphthous-like ulceration of the former throat involvement, and would have suggested diphtheria if seen for the first time. A throat culture was negative for diphtheria, but a pure growth of *Staphylococcus aureus* was obtained. Smears were negative for Vincent's spirochetes or fusiform bacilli. The membrane spread during the next four days, then began receding, and on January 9 was entirely gone. The erythematous nodules had disappeared and the temperature had dropped. On January 12 the white count was 3329, the granulocytes had risen to 56 per cent, and hemoglobin was 56 per cent. Subjectively, the patient had no complaint save weakness. Despite subjective improvement, however, weakness and a pallor were definitely increasing and a red count on January 15 revealed 2.04 million cells. On January 15 liver extract was started by mouth and continued daily. On January 18 the red cells were 1.55 million, the white count 1460, the hemoglobin 35 per cent, and the granulocytes reduced to 44 per cent. There was marked achromia, but little or no variation in size or shape. There were no nucleated red cells; the platelets apparently were decreased. A rapid destruction of red cells was occurring without any attempt at regeneration by the bone marrow.

On January 20 the red cells were 1.15 million. The lips and mucous membranes appeared bloodless. Increased fragility of the red cells was demonstrated in salt solution, laking occurring in a .5 per cent salt solution, with complete hemolysis at this concentration. A transfusion of 300 cc. of whole blood on January 21 failed to help her. On January 24 a rectal ulcer appeared and became deep and necrotic in the next few days. On January 26 she again was transfused which was followed by a chill. A count on January 30 showed only a .9 million red cells. The patient lapsed into a semicomatose condition, arousing at intervals. On February 17 minute petechiae first appeared under the tongue. The last blood count on February 24 showed .78 million red cells, 1400

white cells, 15 per cent hemoglobin with 60 per cent granulocytes. She died later that day. The necropsy showed the signs of tissue exsanguination, a spleen enlarged three times the normal size and long bone marrow replaced by fat, apparently aplastic. No sternal bone marrow was obtained.

CASE 2.—Mrs. R. C., age fifty-one, a housewife, nursed her husband, who was sick with influenza. She became sick, went to bed but was up in two days. One week later, on December 31, 1927, she suddenly was taken sick with sore throat and aching muscles. On January 1 she had a fever of 102 degrees, and was seen by Dr. R. C. Woodhull, who sent her to Saint Vincent's Hospital. Her throat showed a grayish white spotted membrane on both tonsils. There were two small aphthous-like ulcers on the roof of her mouth. She had a fever of 102 degrees which rose to 103 degrees the following day. A blood count revealed 2067 white cells with no granulocytes seen in a differential count. The red cells were 4.2 million with 70 per cent hemoglobin. On January 4 the temperature was normal. On January 5 the white count was 954, but 26 per cent of granulocytes had appeared. The tonsillar membrane had gradually softened and on January 5 practically was gone. On January 7 the patient was discharged insisting she felt well, but the white cells still were 2000 with only 28 per cent granulocytes. A smear of the throat had given a pure culture of *Staphylococcus albus*. In view of the definite reduction of granulocytes and the throat lesions the diagnosis of agranulocytic angina seemed justified.

The patient was readmitted on August 11, 1928, on Dr. A. S. Granger's service. Since her discharge she had failed to regain strength fully, spending a great deal of time in bed. She had had numerous slight attacks of sore throat, but never bad enough to call a doctor. Examination showed her to be frail and undernourished. The tonsils were small, but there were a few small ulcers present on the roof of the mouth. She complained of rectal pain, and examination revealed a small hemorrhoidal tag with a small ulcer at the base. The temperature on admission was 101 degrees, dropping to 99 degrees two days later. The blood count showed 4.9 million red cells, 8900 white cells with 67 per cent granulocytes and 33 per cent lymphocytes.

On August 23 her white cells were 3925 with 58 per cent granulocytes. On August 27 they had dropped to 3000 with 54 per cent granulocytes. Her temperature had been normal for a week. The rectal ulcer had healed and she was feeling fairly strong. It was believed that her infected tonsils possibly were responsible for her repeated attacks of sore throat and that her condition was as good as it ever would be. Accordingly a tonsillectomy was done by Doctor Woodhull on August 28. The tonsils were found to contain pus. On September 2 there were 4293 white cells with 52 per cent granulocytes. Her throat healed gradually, without hemorrhage. On September 11 she was discharged with normal temperature and her mouth and rectal ulcers healed. Since then she has felt fairly well but with her strength still not up to normal.

CASE 3.—Mrs. R. A., age forty-six, a secretary, on September 9, 1927, was suddenly taken sick with high fever and aching muscular pains. She had a chill at this time and complained of sore throat. She was seen on September 10, 1927, with what appeared to be follicular tonsillitis. She was in bed seven days, made an uneventful recovery and returned to work September 19, feeling well. On September 22 she again became sick with sore throat and fever of 102 degrees. There was daily afternoon fever and the gums became red and intensely swollen. A laryngologist prescribed sodium perborate and neosalvarsan, locally. She became steadily worse, however, and was sent to the Hollywood Hospital, October 3, by Dr. George D. Ruth.

Her past history was irrelevant save for repeated attacks of tonsillitis. A blood count revealed 3.47 million red cells, 65 per cent hemoglobin, and a white

cell count of 2100, of which 90 per cent were small lymphocytes, four large mononuclear and six transitional cells. Not a single granulocyte was seen. There was moderate albuminuria with an occasional hyaline cast present.

A smear from the gums and throat revealed numerous spirochetes of Vincent's and fusiform bacilli. Blood Wassermann was negative. The throat was injected without any definite membrane present. The gums were swollen and soft. There was no generalized or significant localized adenopathy; examination of the lungs and heart showed no abnormality. There was no splenomegaly. Repeated white counts showed approximately 2000 cells. Not a single granulocyte was seen until October 10, when four polymorphonuclear neutrophils appeared. A diagnosis of agranulocytic angina had been made immediately following the first blood count. Due to the uniform fatality of the cases reported prior to that time, there was little choice of therapy. Empirically, leukocytic extract was given in daily injections with the faint hope that a favorable action in stimulating the bone marrow might result. On October 10 the white count was 2600. The next day it had risen to 4400, polynuclear cells 36 per cent, with lymphocytes reduced to 58 per cent. On October 15 white cells were 7400, polynuclear cells increased to 62 per cent. A vaginal smear taken on October 12 showed numerous spirochetes of Vincent's and fusiform bacilli. There was no ulceration present, however. The throat improved rapidly, the temperature dropped to normal and the patient was discharged in fair condition on October 26. The white count at this time was 5000 with 60 per cent granulocytes. Her strength returned slowly, but she was able to resume her work November 20. Since that time she has remained continuously at work. She does not feel strong or physically up to normal, but there has been no return of sore throat or fever. White counts have ranged from 3100 in March 1928 with 76 per cent lymphocytes, to 10,000 in June 1928 with 47 per cent lymphocytes. Smears from her gums repeatedly have shown Vincent's spirochetes in spite of treatment.

COMMENT

These three cases have many points in common.

The patients were middle-aged women, undernourished and relatively in poor health. Patients previously reported in the literature usually have been physically below normal. It is interesting to note that bone marrow aplasia experimentally follows simple starvation in pigeons.⁵

Duke⁴ reports a case with chronic aplastic anemia from continued undernutrition. Here a concentrated diet of liver and vitamins produced a rapid recovery. It is plausible that continued poor health might render a normally resistant bone marrow vulnerable to a toxin with a resulting aplasia first affecting the granulocytes. Liver extract failed to cause improvement in the first patient, but it was given late. The aplasia in that patient was progressive, apparently involving gradually the red centers with a resulting progressive aregenerative or aplastic anemia. Whitehead's patient developed a similar rapid anemia.⁶ Two of the patients recovered but have continued in poor health. The condition is not uniformly fatal as was at first believed, recoveries having been reported in more recent reports. There apparently exists, therefore, a mild type of agranulocytic angina going on to recovery, and occurring usually in asthenic middle-aged women. That the bone marrow vulnerability lingers is suggested in

the report of a case by Moore and Wieders⁷ with recovery from one attack and recurrence, with death later.

CONCLUSIONS

1. Three cases of agranulocytic angina are reported; one progressing to an aregenerative or aplastic anemia.

2. Agranulocytic angina probably is a symptom complex belonging in the same category as aplastic anemia. It may be idiopathic or secondary to a known poison.

3. There are patients who have mild attacks of agranulocytic angina with apparent recovery, but they continue in poor health.

1501 South Figueroa Street.

REFERENCES

1. Dodds, K., and Williamson, S. J.: Severe Granulocytic Aplasia of Bone Marrow. Report of a case following arsphenamin treatment in congenital syphilis. *J. A. M. A.*, 90:663, March 3, 1928.
2. Wheelihan, R. Y.: Granulocytic Aplasia of Bone Marrow Following Use of Arsenic, *Am. J. Dis. Children*, 35:1032, June 1928.
3. Feinberg, S. M.: Aplastic Anemia Following Neoarsphenamin, *J. A. M. A.*, 78:888, March 25, 1922.
4. Duke, W. W.: Aplastic Anemia, *J. A. M. A.*, 91:720, September 8, 1928.
5. Doan, C. A.: Capillaries of the Bone Marrow of the White Pigeon, *Bull. Johns Hopkins Hospital*, 33:222, June 1922.
6. Whitehead, R. C.: Agranulocytic Angina. Report of a case occurring in a man. *Virg. Med. Monthly*, 54:761, March 1928.
7. Moore, J. A., and Wieder, H. S.: Agranulocytic Angina. Report of a case with two attacks. *J. A. M. A.*, 85:512, August 15, 1925.
8. Askey, J. M.: Aplastic Anemia Due to Benzol Poisoning, *Calif. and Western Med.*, October 1928.

THYROID GLAND ENLARGEMENT

ITS INCIDENCE AND OTHER PHYSICAL DEFECTS IN TWENTY-FIVE HUNDRED AND SIX SCHOOL PUPILS

By E. L. HANSEN, M. D.

AND

VERA KLINGMAN, R. N.
Logan, Utah

A TOTAL of twenty-five hundred and six students in the Logan, Utah, public schools were given a comprehensive physical examination during the 1926-1927 school year. The students examined included high school, junior high, and grade school pupils in numbers of 614, 464, and 1428, respectively. Ages ranged from 6 to 18 years.

Of the 2506 pupils examined, 1271 were girls. Of these, 589, or 46.3 per cent, showed various degrees of thyroid hypertrophy. The remaining students were boys, a total of 1235, and these showed some degree of thyroid enlargement in 275 cases, or 21.2 per cent. The general average of enlargement for both sexes is 34.4 per cent.

In a report by McClendon, Hathaway, Vanderluis and Dahl,¹ the iodine content of water in Logan, Utah, is given as 40 parts per 100 billion.

Reports from Other Places.—For purposes of comparison it may be said that Mustard and Warring,² in reporting thyroid enlargement in children in Rutherford County, Tennessee, stated that it occurred in girls in 12.3 per cent of cases and in boys in 5.5 per cent of cases, or a general average of 9.7 per cent.

D. F. Farrar,³ chemist to the Tennessee geological survey, reported iodine content of water from three sources in Rutherford County as 12, 14, and 16 parts per 100 billion parts, respectively.

Out of 12,405 children in twenty-eight districts in Connecticut,⁴ 6608 were girls with 29.4 per cent thyroid enlargements, and 5797 were boys with 7 per cent enlarged thyroids. This represents a mean of 18.9 per cent. The iodine content in the small lakes and rivers throughout Connecticut averages 174 parts per 100 billion.⁵ Among Cincinnati school children 40 per cent of the girls and 27 per cent of the boys had some thyroid enlargement. This gave a mean of 33 per cent.⁶ The iodine content was not investigated.

In thirteen Minnesota localities 71 per cent of the girls and 41 per cent of the boys had thyroid hypertrophies. The mean value in this case is 58 per cent.⁷ The iodine content of water from various points in Minnesota, and especially from the Mississippi River, ranged from 10 to 174 parts per 100 billion.⁸

SURVEY AT LOGAN, UTAH

Figures for the Logan Survey.—Returning to the pupils under consideration in this paper, there were, for both sexes, 863 cases of thyroid enlargement; of which 663 were of slight degree, 186 moderately enlarged, and only 14 markedly enlarged.

A most important and interesting observation was made as regards tremor and tachycardia in relation to these cases of thyroid enlargement. Tachycardia (defined in this report as a rate of 100 or more) was present in seventy-five of the 863 cases; whereas tremor existed in 150 cases. Tachycardia therefore only had one-half the frequency prevalence of tremor, and with the bare exception of one or two instances never existed without tremor also being present. Conversely tremor existed in twice as many cases as did tachycardia and in one-half of its cases existed in the absence of tachycardia.

This study accordingly prompts the conclusion that in practically 100 per cent of cases, tremor as a symptom exists as a forerunner of tachycardia. However, the writer is not unaware of the studies of Hyman and Kessel⁹ showing the relationship between thyroid enlargement and a subsequent or even preëxistent "autonomic imbalance," accounting for symptoms simulating thyrotoxicosis in the cases of thyroid enlargement in which no true goiter symptoms actually existed.

This group of 863 Logan pupils having thyroid enlargement represents, then, a mixture of true goiter and those of simple enlargement, with "goiter phobia" (anxiety neurosis) or "autonomic imbalance."

Since it was impracticable to make basal metabolic tests to differentiate these two types, they

are reported in one group, with the above explanation. Whether the pupil is developing true symptoms of toxic goiter or whether it is a case of progressive autonomic imbalance in the sympathetic nervous system, all of the above cases nevertheless bear out the conclusion that in practically 100 per cent of cases, tremor antedates tachycardia as a disturbance in the nervous system mechanism.

The other defects found were as follows: Of the 2506 pupils examined, forty showed a need for refraction; while eight had inflammations of the eyes representing various types of conjunctivitis. There were fifty-one pupils with deaf ears from wax or otitis media; and fourteen had actively chronic discharging ears.

The distribution of wax plugs was as follows: right ear, 104 cases; left ear, 106 cases; both ears, 113 cases; a total of 323 cases. A foreign body existed in the ear of only one pupil, consisting of an oat husk. Nasal obstruction in the form of hypertrophic rhinitis, enlarged turbinates, deviated septum, or a combination of these, was present in 964 pupils; of which in 429 obstruction was on the left side, in 230 on the right side, and 305 on both sides. Diseased gums existed in fourteen out of 1078 pupils who were specially examined for gingivitis and pyorrhea. In all fourteen cases the diseased gums were present about the lower incisors, under crowded teeth conditions.

Tonsils had been removed in 895 of the total number of students; tonsils were apparently normal in ninety-five individuals and diseased in the remaining 1516 students. Tachycardia was present in seventy-five individuals. A murmur was present in eighteen pupils, with definite enlargement in four of the latter. The cardiac hypertrophy was found in pupils with valvular lesions which were dependent on focal infection. Lung pathology, principally phthisical, was found in sixteen students; most of them gave a positive tuberculosis family history.

Only the high school boys were examined for hernias and varicoceles. Out of 290 examined, eleven had inguinal hernias, six of which were right, four were left, and one double. Varicocele was found in forty-eight of the 290 boys, all cases being present upon the left side.

52 North First Street.

REFERENCES

1. Physiological Reviews, Vol. vii, No. 2, April 1927. Also, McClendon, J. F.: Proc. Soc. Exper. Biol. Med., Vol. xxiii, 494, 1926.
2. Mustard and Warring: Thyroid Enlargement, Jour. A. M. A., March 5, 1927.
3. Farrar, D. F.: Personal Communication for Mustard and Warring.
4. Olesen and Taylor: Public Health Reports, Vol. xli, No. 33, August 13, 1926.
5. McClendon, J. F.: Distribution of Iodin, etc., Physio. Reviews, Vol. vii, No. 2, April 1927.
6. Public Health Reports, Vol. xli, No. 33, August 13, 1926.
7. Public Health Reports, Vol. xli, No. 33, August 13, 1926.
8. McClendon, J. F., Distribution of Iodin, etc., Physio. Reviews, Vol. vii, No. 2, April 1927.
9. Hyman, H. T., and Kessel, Leo: Studies of Exophthalmic Goiter and the Involuntary Nervous System, Jour. A. M. A., June 25, 1927.

PSEUDOHYPERTROPHIC MUSCULAR DYSTROPHY

ASSOCIATED WITH AN ACUTE MENINGEAL SYNDROME

REPORT OF A CASE

By MARK GERSTLE, JR., M. D.

AND

WILSON PARKER GODDARD, M. D.
San Francisco

INASMUCH as the etiology of the myopathies is obscure it appears worth while to report a typical case which was associated with an unusual meningeal seizure. In the literature of the past twenty years no references to this combination have been found. However, the association between muscular dystrophy and other conditions has been reported. Daniels¹ reported a case associated with poliomyelitis; Timme believes the disturbance to be associated with pineal dysfunction; Lennon² also feels that the fundamental cause is a congenital dyscrasia due to an endocrine imbalance. In his series of cases the symptoms tended to manifest themselves for the first time following acute infections. He observed the occasional improvement which occurs at puberty, and for this reason also feels inclined toward the endocrine theory of causation. He mentions the occurrence of hypoglycemia and the increase of blood creatinin, and feels that the pseudohypertrophic replacement of muscle fibers by other tissues may very probably be due to a deranged carbohydrate metabolism in which glucose is converted to fat rather than to glycogen. He notes that the disease occurs five times more often in males than in females, and also remarks the unusual incidence in the poorer classes.

Davis³ denies any direct connection between lues and the heredity factor. This observer agrees with the consensus of opinion, namely, that the condition is only transmitted through the female although it is chiefly manifested in the male; in other words sex-linked, as in hemophilia and other diseases. Davis also notes the frequent similarity between the pathology of muscular dystrophy and poliomyelitis.

REPORT OF CASE

J. A., male, seven and a half years of age, entered Mary's Help Hospital January 19, 1929, complaining of headache, fever, vomiting, chills, and stiff neck and back for one week prior to admission.

Family History.—Both parents have a luetic history and have undergone several courses of specific treatment. The mother has had fifteen pregnancies with seven miscarriages. Two children died before their second year, one of whom "was born sick and died of a cold," and the other from "pneumonia." Of the six living children, the oldest, a boy sixteen and a half years of age, has had a positive blood Wassermann. A sister ten and a half years of age exhibits excessive obesity, particularly about the hips, increase of coarse hair on the legs and neck, a puffy myxedematous type of face, and an irritable, negativistic personality. A brother four and a half years of age has a definite hypertrophy of the thigh muscles and, although his gait is not dystrophic in character, shows weakness in getting up from the floor and a tendency to avail himself of objects in the room for support or to "climb up" himself. A sister two and a

half years of age is apparently normal. Another sister one month old has bilateral clubbed feet, snuffles, rhagades, and signs which suggest a spina bifida. No other history of lesions of the muscles or nervous system was discovered although the mother knew a good deal about her immediate family, grandparents, parents, aunts, and uncles, all of whom lived in the same small Italian town.

Past History.—The mother states that she had a normal delivery at the patient's birth, and that the patient was apparently a normal child at birth; he was breast fed, strong and healthy in every way until August 1927. At that time he contracted whooping-cough from which he made an uneventful recovery except for protracted weakness. Following his convalescence he had an acute gastro-intestinal upset from overindulgence in candy. At this time his mother noticed that his gait was wobbling, that he had difficulty in walking downstairs, that he had a tendency to fall backward, and that he had lordosis. When he fell he always had to "climb up" himself or some article of furniture to reach the erect position. All these symptoms had been steadily progressive up to the onset of his present illness. His history otherwise is inconsequential. His mother states that she always thought him to be of average mentality, but inclined to be taciturn.

Examination.—On admission to the hospital the significant points were an acutely ill child lying in bed in the opisthotonic position, on his right side with knees flexed. He was lethargic, semistuporous, and could be aroused only with great difficulty. The Kernig sign was positive on both sides; all the deep reflexes were hyperactive and equal; the pupils and fundi were normal; the lungs, heart, throat, and ears were normal and there were no palpable glands. The abdomen was normal. The rectal temperature was 99.8 Fahrenheit, pulse 104, and respiration 24. A spinal puncture was done at once and clear fluid spurted from the needle. It contained 101 cells, 98 of which were lymphocytes; the Pandy test was positive, and the fluid reduced Fehling's solution. The Wassermann was negative in all dilutions, the colloidal gold curve was 2,333,431,000. There was no web. After standing for twenty-four hours in the ice-box, the culture was negative. The white blood cell count numbered 11,400 with a normal differential count. The urine showed no pathological changes.

Clinical Course.—Following the puncture the patient immediately began to improve, the temperature was normal within twelve hours and the rigidity and headaches disappeared. Two days after admission the spinal fluid which was then obtained showed no departure from normal, the cell count being two. Within four days of admission the patient had apparently completely recovered from the acute attack, and it was at this time that the signs of pseudohypertrophic dystrophy were first studied. These consisted of definite bilateral hypertrophy of the calf muscles and atrophy of the muscles of the thighs and pelvis. The gait was wobbling and unsteady, and the patient climbed up himself in characteristic dystrophic fashion.

COMMENT

The acute onset of symptoms characteristic of meningitis, associated with a pleocytosis and an increase in cerebrospinal fluid protein, caused the presumptive diagnosis of tuberculous meningitis to be made. The speedy and apparently complete recovery renders this condition extremely unlikely. Just how to classify this seizure is difficult. It can hardly be called a meningismus because of the abnormalities in the cerebrospinal fluid. The association of the meningitis attack with the pseudohypertrophic muscular dystrophy seems to us to be apparently unrelated. No similar combination has so far been reported.

In reference to the literature the apparent relationship of our case of dystrophy to lues in the

parents and endocrinopathy and other congenital defects in the siblings is of interest.

490 Post Street.

Mary's Help Hospital.

REFERENCES

1. Daniels, L. G.: Acute Poliomyelitis in a Case of Progressive Muscular Dystrophy, *Jour. A. M. A.*, Vol. lxxxvii, p. 1783, November 20, 1926.
2. Lennon, P.: Pseudohypertrophic Muscular Paralysis—Preliminary Report of the Clinical Study of Thirty-Nine Cases, *Jour. A. M. A.*, No. lxxxvii, p. 379, August 7, 1926.
3. Davis, E. L.: Endocrinology of Muscular Dystrophy, *Kentucky M. J.*, Vol. xxiii, p. 527, November 1925.

Noise and Health.—A Chadwick public lecture was delivered in the University Hall, Gordon Square, W. C., on February 21, by Dr. Dan McKenzie, who took as his subject, "Noise and the Public Health." Sir William Collins was in the chair. Doctor McKenzie said that modern civilization was attended by various serious drawbacks, among them being ugliness, which was presented to both the eye and ear. Ugliness to the ear was noise; there were other points of view, not necessarily the same as the physicist's, from which noise may be regarded. Any sound that disturbed repose was noise, which startled and exhausted the human nervous system. The great increase of industrial noises in workshops and factories was acknowledged to have a bad effect on those who worked in them; efforts had been made to reduce the hurtful sounds and the exhaustion they produced. Domestic noise was another affliction of modern life largely produced by street and highway traffic, and little had been done to minimize it. The lecturer proceeded to describe the actual effects of industrial and domestic noises on public health, and discussed the question, "Has the increase of noise any influence in the increase of mental disorders?" He lamented the dying down of government interest in the trouble. Cessation of activity had been attributed to difficulty in concocting a definition of noise. A definition was needed, no doubt, to prevent undue interference with industry. Fifty years ago an English Government had contrived to legislate against unsanitary dwellings without any definition to speak of, the only description being that local authorities were empowered to condemn any premises in "such a state" as to be a nuisance or injurious to health; subsequent juridical rulings had shown that it was only necessary for public health purposes to prove interference with "personal comfort." This was what noise did, after all. The lecturer suggested: (1) That "zones of silence" during hours of silence should be demarcated by police or public health authorities. (2) That the streets in front of schools, colleges, hospitals, and nursing homes should be paved with rubber blocks. (3) That the size, weight, and speed of motor lorries should be reduced. (4) That heavy goods should be relegated entirely to the railways for transit. Doctor McKenzie concluded by reading a letter from a patient in a hospital complaining bitterly of the noises, not outside, but inside the hospital; he added that after inquiry he had found the complaints to be true for all hospitals. They were much too noisy, and recovery of the sick within their wards was interfered with by neglect of a primary rule of treatment. He appealed to all hospital authorities to go into this matter with their nursing staffs. They would be astonished and humiliated by the result of their inquiries. Reform was needed in the matter of subjection of invalids to noise, and reform, like charity, should begin at home. Gramophone records were used to illustrate various types of objectionable mechanical sounds and human cries.—*Brit. M. J.*, 1:415, 1929.

BEDSIDE MEDICINE FOR BEDSIDE DOCTORS

An open forum for brief discussions of the workaday problems of the bedside doctor. Suggestions for subjects for discussion invited.

VERTIGO

Vertigo Caused by Organic Brain Disease

Carl W. Rand, Los Angeles.—Vertigo is a common symptom in brain tumors. It may be seen in any case presenting signs of increased intracranial pressure from tumor, regardless of the location of the growth. It is seldom a predominating symptom, however, except in cerebellar or less frequently in frontal lobe tumors.

Synergia is perhaps the principal function of the cerebellum. Therefore anything which disturbs the function of this organ, especially a tumor, tends to produce loss of motor control, or asynergia. Under these circumstances vertigo is usually present. The vertigo is usually not systematized, as is seen in true labyrinthine disease. Objects seldom whirl before the patient in a definite given direction. His gait is disturbed, and if the tumor is located in one of the cerebellar lobes, he tends to reel toward the side of the lesion. If the vermis is involved he presents trunkal asynergia, being unable to control trunk movements, and when he walks the legs follow the lurching body. Ataxias of various sorts and nystagmus are usually present. In conjunction with these findings are seen the other signs of increased intracranial pressure, namely, choked disk, headaches, nausea, and vomiting.

In frontal lobe tumors, on the other hand, vertigo is often present and is associated with disturbances of gait or station. Much confusion sometimes occurs in trying to differentiate between frontal lobe and cerebellar tumors. A disturbance of the fronto-ponto-cerebellar tract is supposed to exist in such cases. The vertigo in frontal lobe lesions is more likely to manifest itself when the patient is stationary, as in a sitting or standing position. The wide ataxias so often present in cerebellar lesions is less evident. When the patient attempts to sit on the side of the bed he will often pitch backward and forward, being utterly unable to sit erect. In trying to walk he will likewise show more of a halting or pitching gait than is usually seen in cerebellar cases where the gait is more reeling. He will often show changes in character, clownishness, or prankishness. On the other hand he may show signs of mental deterioration, loss of memory, poor insight, or in some cases may become untidy and slovenly. Such mental symptoms are seldom seen in cerebellar cases.

Vertigo is perhaps the commonest and most disabling symptom following severe head injuries. It is generally not systematized and objects do not turn in any definite direction before the patient. It becomes most annoying when the patient first

gets up from bed after his injury. It is evanescent, not constant. It is most accentuated by any quick movement such as stooping, turning, moving the head or eyes, and particularly on looking up. It is more like a giddiness or light-headedness than the vertigo seen in cases of brain tumor. It is probably closely associated with disturbances of the equilibratory apparatus of the inner ear, or with some of its intracranial pathways. It persists for a long time, months or years, and in industrial cases is of great importance, as it is disabling enough to prevent many workmen from resuming their former occupation, especially if this entails going up on heights.

* * *

Vertigo—Secondary to Circulatory Disturbances

Ernest S. du Bray, San Francisco.—In this résumé I shall discuss briefly the principal circulatory disorders in which vertigo is a notable symptom. The vertigos of cardiovascular origin form a large and significant clinical group and are related physiologically to a disturbance in the intracranial circulation which produces either an anemia or a hyperemia of the brain capillaries, with resultant secondary effect on the ear mechanism.

Cerebral anemia is primarily dependent on sclerosis of the cerebral vessels, with or without an associated arterial hypertension. The clinical picture of cerebral arteriosclerosis is usually well defined and readily recognized in most instances. Woltman, in a study of 146 patients with this condition, noted that dizziness was complained of in 57 per cent of the cases, whereas in 11.8 per cent it was a prominent complaint. As a matter of fact, dizziness was the most common symptom in the whole arteriosclerotic group and was characterized by its indefinite character, occurring either in transitory mild attacks, or as a constant sensation. Frequently arteriosclerotic patients speak of dizziness when it is reasonable to assume that they mean syncopal attacks or some phenomenon other than vertigo. It is hard to be sure what significance these attacks have. Probably in most instances there is a temporary vascular insufficiency of some portion of the brain. After a series of such attacks, one often finds residual weaknesses of the extremities, increased reflexes on one side, a speech difficulty, or slight mental impairment. In the classic words of Sir Clifford Allbutt, in his splendid little book presenting the summary views of arteriosclerosis, he describes this condition as follows: "When in the

apietic and thrombotic mode of atherosclerosis the cerebral vessels are failing, besides or before these smaller pareses, we note vertigo, somnolence, fretfulness, some loss of memory, some incoherence of mind, some slurring of the feet or a drag of one of them, or like evidence of neurovascular atrophy of the brain." The lesions in these instances are probably small lacunar hemorrhages or areas of softening. Bilateral deafness and bilateral tinnitus are the rule in cases of cerebral arteriosclerosis, and these signs, together with retinal arteriosclerosis, disturbance of the vibratory sensibility in the lower extremities, incontinence of urine, and the patient's general appearance, are common enough to suggest that vertigo is due to cerebral vascular degeneration.

I have dwelt somewhat at length on the vertigo of cerebral arteriosclerosis because of its extreme clinical importance. Closely related is the dizziness which may herald a frank cerebral accident, either of the apoplectic or thrombotic type.

Besides the foregoing causes of vertigo secondary to vascular changes and concomitant anemia, this symptom is not uncommon in many cardiac disorders. It can be readily understood that certain valvular diseases, aortic insufficiency and stenosis, for example, may present dizziness. Perhaps, however, the cardiac condition in which it is most characteristically noted, is the so-called Adams-Stokes disease (acquired permanent bradycardia). In this disorder there is a permanently slow pulse associated with syncopal attacks and vertigo. The vertigo is usually of the mild type and manifests itself as a passing mental confusion, not going so far as loss of consciousness. This may recur several times a day or at long intervals.

A less readily recognized cause of vertigo is seen on rare occasions, with the cardiac arrhythmia of the extrasystolic type. This atypical form of extrasystolic syndrome consists in the appearance of faintness or even syncope, and it may be confused with Adams-Stokes disease. In most patients, at the time of the extrasystole, there is a transient faintness, but usually it is quite mild and goes no farther. In the instances here referred to, however, when the pause in the pulse is a little prolonged, there results an ischemia of the nerve centers, which may give rise to true vertigo, followed by a tendency to syncope. Even loss of consciousness, though rare, is not unknown.

Another cardiac arrhythmia in which vertigo is occasionally noted, is during an attack of paroxysmal tachycardia.

In conclusion, the only other cardiac condition I shall mention with reference to this symptom, is chronic myocarditis. It may be a significant early complaint and, in fact, may direct attention to the heart through its presence. The type of case here referred to has been most ably described recently by Christian, under the title of "Non-valvular Disease of the Heart." The article appeared in the *Journal of the American Medical Association* of August 29, 1928, and deserves the

attention of all medical men, regardless of their chief interest or specialty.

This completes the circulatory causes of cerebral anemia which I shall discuss. Cerebral hyperemia as a cause of dizziness is less well understood, but should be mentioned in connection with the giddiness and flushes of the menopause.

* * *

Neurotic Vertigo

Edward W. Twitchell, San Francisco.—Vertigo in some degree is a complaint made at one time or other by a large proportion of neurotic patients, and herein are included those individuals suffering from traumatic neurosis. It is, in fact, one of the commonest complaints of the traumatic neurotic.

A great many explanations have been made for the dizziness found in these cases. Its frequency in neurasthenia was the chief argument of Teissier for the cerebellar origin of neurasthenia. Krafft-Ebing thought the vertigo in neurotics was due to vasomotor changes. Oppenheim thought that there might be an actual irritation of the end organ, but Lewandowsky regarded it as purely hysterical. The vestibular apparatus is the peripheral organ of vertigo, just as the cochlea is the end organ of hearing, but it must be remembered that in functional disease there may at times also be organic changes in this end organ. Dejerine said that the vertigo of the neuropathic is nothing but the concentration of the attention on a group of sensations of movement or locomotion which soon fills the field of consciousness, and is thus akin to a phobia. The dizziness which comes from standing on heights, being the result of auto-suggestion, is, therefore, related to or identical with the vertigo of neurasthenics. Young children, having no fear of heights, are not subject to the vertigo of their elders in similar positions. Vertigo may be produced by hypnotic suggestion.

Functional vertigo may be the slight sensation of dizziness so common with the ordinary neurasthenic, a source of annoyance, but not a very serious one. At the other extreme it may be as severe as in the case of that hysterical patient of Binz-wanger who lay helpless in bed for five years attended by nurses night and day to prevent her hurling herself out of bed when the attacks came on. These attacks were likewise accompanied by anxiety, nausea, and vomiting.

Generally the symptom is a relatively minor one, coming on oftentimes with great suddenness, lasting for hours or days or weeks, and terminating often with the capricious suddenness which characterizes all symptoms in the neurasthenic. Oppenheim wrote of a "dauerschwindel" in certain cases with a sudden onset, the dizziness lasting for years. These cases were of neuropathic individuals with psychic abnormalities or of very outspoken neurasthenics.

Some patients will be unable to describe their dizziness more exactly than to say that they have a sense of unsteadiness, others a swimming before the eyes, or a feeling as if they might fall. More rare is the whirling sensation in definite directions

such as one finds in organic disease of the vestibular apparatus.

Recently a patient described to me a whirling in an oblique direction which did not coincide with any of the planes of the semicircular canals.

The dizziness is rarely sufficient to make the patient stagger severely, and falls are extremely rare. When lying down the dizziness is least, worse when standing, and always aggravated by excitement.

Kron knew of one patient, a rope dancer, whose dizziness persisted except when he was on the rope.

The diagnosis of functional vertigo must be made only after careful and repeated examinations have satisfied the examiner that organic disease is not present. A patient with functional vertigo does not give the same response to tests of the end organ which one sees in organic disease, but it must be remembered that patients with functional vertigo sometimes have a coincidental organic trouble and here it becomes difficult, if not impossible, to separate the functional from the organic element. Lewandowsky speaks of a case in which "I was able to make a diagnosis of hysterical vertigo, subsequently confirmed (the diagnosis by others having been given as cerebellar abscess), because the patient insisted that he was always drawn to the same side in his spells." There is no specific treatment for functional vertigo. It must be regarded as part of the neurosis and treated along with the other symptoms in the disease.

* * *

Aural Vertigo

Simon Jesberg, Los Angeles.—Aural vertigo is a type of dizziness that is due to abnormal stimulation of the end organ of equilibrium in the labyrinths. This type of vertigo is always accompanied by nystagmus of a certain type and a sensation of turning.

Experimentally aural vertigo, with its accompanying nystagmus, may be produced in three ways: (1) by turning, (2) by caloric, and (3) by electrical stimulation. The direction of the vertigo and the nystagmus can be determined according to that part of the labyrinth stimulated. The labyrinth on one side is in opposition to that on the other side, thus when one labyrinth ceases to function, the normal side overacts, resulting in vertigo and nystagmus, which is due to lack of balance of the remaining side. Pathological conditions such as inflammation and suppuration of the middle ear may extend to the internal ear; if this causes stimulation due to inflammation, nystagmus and vertigo result. The nystagmus in this instance will have its quick component toward the diseased side. Hearing is still present. Destruction of the labyrinth results in complete deafness, and in this condition the vertigo and nystagmus are due to overaction of the healthy side and the direction of the quick component is reversed, that is, away from the diseased side.

Systemic disease such as syphilis, leukemia, and toxemia, sometimes affect the internal ear. So-

called Meniere's disease is due to a spontaneous hemorrhage into the labyrinth. As first described by Meniere in 1848, it presents certain symptoms: (1) deafness, (2) vertigo, (3) tinnitus, and (4) nausea. These symptoms are present in destruction of the labyrinth from any cause. Compensation of function after destruction of one labyrinth occurs gradually after several months, so that there is no longer present vertigo and nystagmus due to overacting of the healthy unopposed side.

If, then, vertigo of aural origin is present, nystagmus will also be present. The ear should be examined for middle ear inflammation or other local disease. Hearing tests indicate whether the cochlear part is also involved.

Toxemia from a focus of infection occasionally causes a mild vertigo, probably due to irritation of the internal ear. This is apt to be intermittent and transient. In this condition, as well as other systemic diseases, such as lues and leukemia, inspection of the ear will show no inflammation.

The Record of Sixteen Years.—Since May 22, 1913, the Foundation has paid out from income and principal a total of \$144,189,400. The emphasis has been on the training of doctors, health officers, and nurses, the creation or strengthening of institutions of medical or public health education, the building up of official health organizations, the promotion of field research, the demonstration of new methods. The World War called for exceptional aid to medical services, social work in army camps, and emergency relief, notably for children. For these purposes \$22,000,000 was appropriated.

Temporary antihookworm campaigns in the United States and in many other countries have been broadened into permanent official rural health organizations. Malaria has been studied more fully and methods of control worked out at home and abroad. Yellow fever has been forced to retreat from Mexico and Central America and from Northern South America, until it is now found only in Brazil and West Africa. A wartime antituberculosis organization built up with Foundation aid in France has been wholly taken over by the French and is being incorporated into a general public health service.

Various schools and institutes of public health have been created or extended with Foundation funds. For the strengthening of influential medical schools in many parts of the world from London to Singapore, the Foundation has expended about \$29,000,000. This does not include building, equipment, and support of the Peking Union Medical College and aid to hospitals and the premedical sciences in China.

Up to December 31, 1928, fellowships had been granted to 3187 representatives of fifty-eight countries at a total cost of \$4,908,743. The international significance of these fellowships may be inferred from the fact that 1383 of the total fellows pursued their studies in countries other than their own.—*Information Service of the Rockefeller Foundation.*

Hunters Given Tularemia Circular with License.—An enterprising health officer in the southern part of the state believes in centering his efforts where they will do the most good. He prepared a mimeographed tularemia circular, but instead of distributing it broadcast, gave copies to the license clerk with the request that one be given with each hunter's license issued. We venture the opinion that if any hunter in that district becomes infected with tularemia it will be through sheer carelessness and not through lack of knowledge of how the disease is conveyed.—*Health News.*

California and Western Medicine

Owned and Published by the

CALIFORNIA MEDICAL ASSOCIATION

Official Organ of the California, Utah and Nevada Medical Associations
1016 BALBOA BUILDING, 593 MARKET STREET, SAN FRANCISCO

Telephone Douglas 0062

Editors { GEORGE H. KRESS
 { EMMA W. POPE
Associate Editor for Nevada HORACE J. BROWN
Associate Editor for Utah J. U. GIESY

Subscription prices, \$5.00 (\$6.00 for foreign countries); single copies, 50 cents.

Volumes begin with the first of January and the first of July. Subscriptions may commence at any time.

Change of Address.—Request for change of address should give both the old and the new address. No change in any address on the mailing list will be made until such change is requested by county secretaries or by the member concerned.

Advertisements.—The journal is published on the seventh of the month. Advertising copy must be received not later than the 15th of the month preceding issue. Advertising rates will be sent on request.

Responsibility for Statements and Conclusions in Original Articles.—Authors are responsible for all statements, conclusions and methods of presenting their subjects. These may or may not be in harmony with the views of the editorial staff. It is aimed to permit authors to have as wide latitude as the general policy of the journal and the demands on its space may permit. The right to reduce or reject any article is always reserved.

Contributions—Exclusive Publication.—Articles are accepted for publication on condition that they are contributed solely to this journal.

Leaflet Regarding Rules of Publication.—California and Western Medicine has prepared a leaflet explaining its rules regarding publication. This leaflet gives suggestions on the preparation of manuscripts and of illustrations. It is suggested that contributors to this journal write to its office requesting a copy of this leaflet.

EDITORIALS

REFERENDUM BALLOTS ON INCORPORATION OF THE CALIFORNIA MEDICAL ASSOCIATION

Explanation of Ballots Which Will Be Mailed to You.—Within a few days after the receipt of the July number of CALIFORNIA AND WESTERN MEDICINE, every member of the California Medical Association will receive a ballot with stamped reply envelope addressed to the California Medical Association. Also some explanatory leaflets telling of the action of the House of Delegates at the last annual session at San Diego, wherein it was ordered that a referendum ballot should be taken on the proposed incorporation of the California Medical Association.

The minutes of the May 8, 1929 meeting of the House of Delegates, which were printed in the June issue of CALIFORNIA AND WESTERN MEDICINE, on page 437, gave a synopsis of the proceedings of the House in relation to the proposed referendum and to the new Constitution and By-Laws which were adopted at that time.

The proposed California Medical Association corporation is to be a nonprofit corporation without capital stock. The form of corporation is one which is permitted under the California statutes and has been used by the San Francisco County Medical Association as a means of best caring for its properties and funds. The incorporation

plan has been most carefully studied by the Council during the last three years, and not only has its endorsement, but at San Diego also received that of the House of Delegates.

* * *

Next Step in the Procedure for Incorporation. What is now wanted and what is needed, in order to best comply with the corporation laws of California, is the endorsement of the members at large.

The minutes and literature to which reference here has been made, and which will be enclosed with the ballot, will explain the details. In this column we can only add that it is our sincere belief that this form of incorporation will amply safeguard, in fullest degree, all the properties and funds of the California Medical Association for all time to come—insofar as carefully constructed laws can so safeguard—and that through such incorporation, the California Medical Association will be in position to develop into a stronger and in every way a better state medical association than would be possible without such incorporation.

* * *

How to Vote If in Favor of Incorporation.—If you are in favor of incorporation, take your ballot and cross out the words “(b) I disapprove and do not consent to”—

Then sign your name and address, and mail promptly to the central office of the Association in the stamped reply envelope which will be enclosed with the ballot.

* * *

Important That Every Member Should Vote.—Please remember that there are certain legal technicalities in all this, and that it is important that every member should vote and mail his or her ballot promptly. Do this at once and the duty and obligation will be behind instead of in front of you. Also you will have the satisfaction of knowing that you have done your part in laying a broader foundation for future growth of the California Medical Association.

THE BACTERIOPHAGE—VIEWPOINTS OF SCHULTZ OF STANFORD

A Previous Paper on the Bacteriophage.—The October 1927 issue of CALIFORNIA AND WESTERN MEDICINE presented a discussion of “The Bacteriophage—Its Prophylactic and Therapeutic Value—A Review.” The opening sentence of E. W. Schultz of Stanford, author of the article, stated: “The discovery of bacteriophage by d’Herelle (of the Pasteur Institute of Paris) in 1916 marks the beginning of one of the most important epochs of bacteriology, not only because of its theoretical, but probable practical bearing.” . . . “D’Herelle concluded that the phenomenon must be due to an invisible parasite of the bacteria, and he accordingly gave it the name ‘bacteriophage.’”

In his conclusions our Stanford colleague stated: “A review of the literature indicates that the bacteriophage may exercise either a prophy-

lactic or a therapeutic value in certain infectious diseases. . . . Further studies to explain the irregularity of the results are clearly indicated."

The above excerpts of a few pertinent sentences in the presentation made by Schultz call attention to his belief that d'Herelle's discoveries were important. He emphasized also the need of caution before plunging into acceptance of the new agent as a therapeutic measure of great value.

That these words of caution were well spoken is proved by the recent exploitation of bacteriophage products by some of the pharmaceutical houses.

* * *

Importance of the Article on the Bacteriophage: Its Request for Coöperation.—The current issue of CALIFORNIA AND WESTERN MEDICINE prints a paper read by Doctor Schultz at the recent San Diego annual session in which he reemphasizes some of the cautions which he had previously laid down.

The current article, as well as the paper which appeared in the October 1927 issue, are worthy of careful perusal and thought.

These paragraphs which are here printed would call the special attention of the readers of this journal to the footnote of the article in this issue, page 8, in which Doctor Schultz and his co-workers at Stanford invite the readers of this journal who are interested in this subject to pool their efforts, using the Stanford laboratories as a sort of clearing house, in order that more accurate knowledge may be gathered and opinions formed of the real value of what may be an important therapeutic aid in the future. It is an interesting field of investigation and under conservative guidance, should be of value not only to those who accept Doctor Schultz's invitation to coöperate, but to the members of the state medical associations of which this journal is the accredited representative. It is hoped many members of the California, Nevada, and Utah Medical Associations will avail themselves of the opportunity which the invitation of Doctor Schultz makes possible. Future contributions on the subject will be awaited with interest.

"FORD ATTACKS MEDICO ETHICS"

A Recent Newspaper Contribution by Henry Ford.—The caption to these paragraphs is taken from a leading article in a recent Sunday edition of the *Los Angeles Times*. The article in question was one of a series of interviews of Mr. Ford, and was presented under the sponsorship of one of the large newspaper syndicates of the United States.

The auspices under which the interviews were given, and their publication on succeeding Sundays, all indicate that they were duly authorized by the great automobile prince of America, Henry Ford of Detroit. It would seem fair to assume, also, that Mr. Ford spoke deliberately on the different topics selected by him.

The article was no doubt widely read, and its half-truths were probably as thoroughly absorbed

and believed by thousands of lay readers, as they were by Mr. Ford himself when he gave the interview. For it is impossible to make oneself think that Mr. Ford would willingly make untruthful statements. What he said may, therefore, be taken as an expression of his beliefs.

Because of his remarkable achievements in the automotive industry and his originality and initiative in building up one of our country's greatest economic achievements, and because of his interesting personality, and also because of the wide publicity and acceptance with which his opinions are received by many of his fellow citizens, his criticisms of the medical profession may well be given passing consideration by the members of that profession.

* * *

Two Major Impressions from Mr. Ford's Viewpoint.—Two impressions stand out after the interview has been read. One, that Mr. Ford evidently has only a superficial knowledge of the training standards and methods of practice of modern-day practitioners of nonsectarian medicine. Two, that the nonapplicability or irrelevancy of Mr. Ford's remarks and criticisms rest largely upon his somewhat basic assumption of thought which crops out throughout his supposed analysis, namely, that the stresses and strains to which the human animal body can be put, are as firmly fixed and as easily determined as are those of an automobile, a bridge or other inanimate object; and that the exploitation of the conservation, care and repair of that human body should follow the same advertising principles and methods which are in vogue with producers of such inanimate things as automobiles and other manufactured products.

Of course there is nothing new in such fallacies of reasoning. Medical men learn early that Mr. Ford's general viewpoint concerning medical practice is almost universal in modern-day America. So much is this the case that practitioners of medicine must keep themselves constantly on guard to prevent themselves from falling into the same and similar errors of reasoning. It is at all times a great temptation to over-evaluate the success or failure of this, that or the other method of treatment which may rest upon a too limited number of cases or experiences.

For with each human being, the physician's relationship is not with inanimate factors like brick, wood, steel, or mortar, the tensile strength and endurance of each type of which can be calculated to a mathematical nicety, and the types of some of which, according to their formulae, can be produced forever with the same qualitative properties. Instead, in the human animal, physicians are called upon to deal with a living or biologic entity, composed, it is true, of certain major organs and tissues. But each of these in turn is composed of constituent or cell units, so bound up in the strength and weaknesses inherited from ancestors, and so responsive to previous diseases and habits associated with each individual's environment, that microscopes, electrocardiographs, x-ray machines and other means of accessory investigation, estimation and measure-

ment, as well as all the knowledge and skill which a well educated and well trained physician can acquire, only too often make such a physician realize how limited is human wisdom in its application to the scientific care of a fellow human suffering from any one of a large number of diseases to which that individual is subject.

* * *

Physicians Recognize the Limitations of Medical Science and Art.—Practitioners of nonsectarian medicine recognize the limitations of the science of medicine. In the past and in the present, and also in the future—unless the mediocrity of endeavor which is associated with state medicine should come into play—these nonsectarian practitioners have organized and strenuously fought for educational and training standards that would give lay citizens a fair assurance of intelligent supervision and care when they called in a doctor. Nevertheless these same lay persons as a rule have given very little support to the nonsectarian profession in preventing the passage of laws which give legal sanction to sectarian or cultist practitioners who graduate from schools demanding little more than reading, writing, and arithmetic as a preliminary education instead of courses of collegiate grade; and which schools give professional training of high sounding type as printed in catalogues, but which are little more than a gesture when considered from the standpoint of really scientific professional training.

* * *

All Doctors Are Alike to Many Lay Persons.—Many of the laity seemingly make no effort to find out about qualifications when a physician is engaged. To many such lay persons all doctors are alike and presumably of equal training and ability. In view of some of his comments, Mr. Ford, in discussing medical ethics, also seemingly classes all doctors, be they nonsectarian or cultist, as of the same general mold and character. The cultist practitioners, by the way, advertise their methods and remedies just as Mr. Ford advises ethical physicians to do. The sins and deficiencies of these insufficiently trained individuals are then unloaded on the ethical group of nonsectarian practitioners, who acknowledge the limitations not only of the art and science to which they have pledged themselves, but also recognize their own personal limitations as well.

The foregoing remarks are laid down because they may serve as a basis for better approach to some of the comments made by Mr. Ford in his interview.

* * *

Do Professional Ethics Interfere with Legitimate Publicity?—When Mr. Ford states, "But when professional ethics are used to prevent the people from getting proved and tested information, 'professional ethics' do not look so good," he is setting up a straw man which he feels sure he can prove to all the world he can easily knock down.

In connection with the foregoing quotation it may be remarked that it is hoped that he will use

some of his wealth to mass the evidence to show that nonsectarian physicians have "prevented the people from getting proved and tested information" on medical matters.

Members of the medical profession who have special facilities for knowledge on this point know of no such attempts to withhold proved and tested information. A physician who discovers anything of value to the human race and who does not give his fellows an opportunity to prove or disprove its worth does not very long remain in good caste in the ethical and nonsectarian medical profession.

* * *

Mr. Ford a Therapeutic Optimist.—In his next paragraph Mr. Ford gives evidence of being a real therapeutic optimist, as witness: "Nearly every day sees some method of surgery or medical treatment which is an improvement on the old."

However, his optimism rapidly gives way to pessimism, for he soon states: "A good many physicians are so busy using their old, accustomed methods of treatment that they haven't time to become informed about new and better methods."

Mr. Ford evidently forgets that an analogous criticism was leveled at him for a number of years, and with far more justice and logic, because he refused to alter to any degree the general shape and construction of the automobile which he had honored with his name. Perhaps some of the physicians who are not swept off their feet by the announcement of every new method of treatment of human ills show the same constructive conservatism which he himself displayed when he held on tightly to something that he felt was very good, in spite of the clamor of exploiters of new and supposedly better automobiles, many of which have already gone into oblivion, just as have many of the supposedly new and better methods of treatment of human ills which were exploited during the same time period.

* * *

Are Physicians Slow in Exploiting New Methods?—Mr. Ford feels that "it is one of the first duties of the profession to see that every step of progress in medical science is given to the public, promptly and fully, and in terms the average man can understand."

But he surely will wish physicians to retain the right to try out and really prove the worth of new remedies before indulging in exploitation of the same. The danger in medicine is not that physicians do not avail themselves of new discoveries. Every intelligent doctor knows his place in a community depends upon his successful work and he is quick to grasp at methods which make for better results. In the matter of doctors who are not intelligent in that manner, the profession must depend upon the laity to help support laws that will increase the standards of professional training and which thus will give an increasing guarantee of better trained doctors. Unfortunately the laity as a rule not only does not give such support, but permits itself to be misled into sup-

port and protection of lower standards of education and training.

Apropos of Mr. Ford's statement about publicity, as just quoted, would it not be proper to suggest that he, as one of the richest men in the world, might here find an admirable place for investment of a few spare millions. A foundation sponsored by him, and dedicated to the dissemination of knowledge that would make for the conservation of human health and life, and the agencies of which foundation could be used to protect all classes of citizens from incompetent practitioners wherever found (although, of course, the lesser the general education, and the poorer the professional training in a group, the larger will be the number of incompetents there to be found), could certainly be of value to the world.

* * *

Do the Same Rules Apply to Manufacturing and Medical Publicity?—Here is another gem from Mr. Ford's interview: "What would happen if the producers of the world's goods assumed the same attitude toward the public (as does the medical profession?)" "Let the public find out what we (the doctors) have to offer, if the public can."

As a matter of fact, nonsectarian physicians are very anxious that lay citizens should know what is offered by practitioners of nonsectarian medicine, namely, that they are a group of well-trained men and women physicians, accepting medical facts just as other scientific facts are accepted; using methods that have been proven safe and efficacious, each member of the guild with absolute right and freedom to use any and all measures which appeal to him, but having the support of his fellows only when truthfully and logically carried out; and giving freely to the profession all discoveries redounding to the benefit of the people of the world, without hope or expectation of personal or economic reward other than the honor which comes through the appreciation of colleagues who recognize the beneficent nature of such contributions.

Because physicians live up to such a code, as a class they do little more than make decent livings for themselves and their families. Through all these years nonsectarian physicians have been the only group in professional or business life who have so consistently lived up to such altruistic principles. Had Mr. Ford applied the same code to his own discoveries, it would not have been possible for him to amass the millions which came to him, because his monopoly of a splendid plan would not have been a monopoly had every other automobile manufacturer been free to use his discoveries.

* * *

How One Great Group of Discoverers were Rewarded.—Mr. Ford, in his interview, speaks kindly of the altruistic spirit in which medical men give to their colleagues, without hope of money recompense, the knowledge and discoveries concerning human diseases. He must acknowledge that this is a most unusual characteristic for any

profession or business to have. He can do a big service along this line by calling attention to the almost beggarly governmental pensions given, for instance, to the widows of the Army physicians who showed how yellow fever was spread and who thus made it possible for our own country annually to save millions of dollars in money and hundreds and thousands of human lives.

And only the other day, newspaper dispatches made mention of the United States Public Health Surgeon-General's recommendation that the widow of Doctor Joseph Goldberger, who had given important knowledge to the world concerning pellagra (his wife at the time submitting herself to experiment), be granted a pension of \$150 a month. It took much effort to secure pensions for the widows of the yellow fever investigators. Will it take more than one session of Congress to secure this pension for Mrs. Goldberger? Will Mr. Ford have one of his representatives investigate this case and, if proven worthy, use some of his powerful influence to have Mrs. Goldberger receive an expression of decent human appreciation?

* * *

Would It Be Better for Physicians to "Patent" Their Discoveries?—Mr. Ford ends his interview by stating, "There are no secrets from the public or from competitors in the industrial and business world except those secrets which are protected by patents and represent the life of a concern. The same company that holds the patents, however, makes no secret of the product, where to get it, how much it will cost, what it will do, etc. . . . In what respect do doctors stand in a different relation to the public? I see none whatever."

Answering these closing sentences of Mr. Ford, it may be said that, if ethical physicians took out patents on their discoveries, just as did Mr. Ford on his, the world would probably show a greater respect for both medical discoverers and medical discoveries. The ordinary layman is so accustomed to being made to pay well for anything that is good that he is somewhat skeptical of anything that is offered free. So much is this the case, that many of such lay persons, when suffering from real or imaginary ills, turn not to physicians, whom they know have had good training and who are of good reputation, but to the cultist, faddist, or other presumable practitioners of the healing art, who conduct their professional activities on a money basis throughout, and who avail themselves of all direct and indirect publicity and advertising agencies that will make for larger groups of paying clients; and which publicity and advertising agencies Mr. Ford presumably holds ethical physicians should also use.

From what has been here quoted and commented upon, it is to be noted that we are somewhat of the opinion that, while Mr. Ford evidently had the very best intentions in giving his interview, he really was talking and giving somewhat dogmatic advice in matters of which, because of his busy life as a manufacturer and executive, he really had little more than a sparse and super-

ficial knowledge; and that in laying the foundation for his criticisms he led himself into error in his reasoning by having in mind as an analogy to the viable human body a nonliving automobile. So that starting out with insufficient knowledge and illogical analogies, it is not to be wondered at that he gave expression to viewpoints which non-sectarian physicians are not likely to accept.

* * *

Suggestion that Mr. Ford Establish a Medical Publicity Foundation.—However, all this can be overlooked if he will but establish a foundation that will be devoted to legitimate and broad publicity concerning human ailments, so that human health and life in our own country and throughout the world may be the better conserved. If he will do something of this sort, members of the ethical and nonsectarian medical profession will be gratified, because they know that with better knowledge of their problems and efforts will come increasing support of their attempts to constantly maintain and improve the standards of professional training and practice, and to bring into being a greater capacity for service to their lay fellow citizens.

No Danger of Sensitization.—Toxin-antitoxin has been, until the present time, made by adding a tiny amount of horse antitoxin to the toxin for the purpose of making it more suitable to be used as the immunizing agent. Some four years ago Doctor Hooker of Boston reported when persons who received 1/100 of a cubic centimeter of horse serum to test whether they were sensitized or not, and then the series of three doses of toxin-antitoxin, that a year later these persons showed a greater proportion of skin reactions when given another intradermal test of horse serum. It is to be noted that these persons had received one hundred times as much serum, through the intradermal test, as from the toxin-antitoxin.

This report caused a considerable number of physicians to worry over whether they were sensitizing children by the toxin-antitoxin injections to later therapeutic doses of anti-serum, these naturally being all from the horse.

We have not been able to prove that toxin-antitoxin does appreciably sensitize to horse serum, but as goat antitoxin is just as efficient as horse antitoxin and does not sensitize animals to horse serum, we decided to substitute goat antitoxin for horse antitoxin in the toxin-antitoxin mixture. This has been done for the past two months.

Most of the commercial biological laboratories have also changed to goat antitoxin in the preparation of their toxin-antitoxin for diphtheria.—*New York Department of Health Weekly Bulletin*, May 1929.

The Work in 1928.—During 1928 the Rockefeller Foundation continued its regular program of activities consisting chiefly in (1) promoting the development of medical knowledge by aiding schools of medicine, nursing, and hygiene in many parts of the world; (2) advancing the cause of public health by helping governments fight certain diseases and strengthen their local health services; and (3) carrying out an extensive fellowship program by which eight hundred men and women were enabled to pursue additional studies, chiefly in countries other than their own. In doing this work the Foundation disbursed from income and capital \$21,690,738, of which \$12,000,000 constituted an endowment fund for the new China Medical Board, Incorporated.—*Information Service of the Rockefeller Foundation*.

Making a State Journal.—The following account of the work required to get out the *Journal of the Michigan State Medical Society* is taken from the April issue.

"All too frequently the journal is received and read with no thought in regard to the details requisite to publish it. Our efficient editor has well enunciated the editorial policy. The member is uninformed as to the amount of time given by the editor in editing the original manuscripts, reading galley proof, then page proofs, writing editorials, classifying original articles, reviewing other journals and books, remaining abreast of progress so as to promptly transmit to the members dependable facts and so prepare for you each month a journal that is of intense value to every member as well as a credit to our society. There is a vast amount of time and labor expended in editorial direction.

"In addition to the editorial supervision there is a business side that must be conducted and directed ere each month's issue can be sent to a member. In 1928 the total cost of the journal was \$15,103.24. From your annual dues \$2.50 per year is credited to the journal fund. A total of \$8,458.36 was thus received, leaving a balance of \$6,644.88 to be acquired to defray all publication costs. This balance is acquired through advertising sales. Advertising space is not sold without effort. Constant contact with advertisers must be maintained and arguments advanced to secure renewal of expiring contracts. Then follows service to the advertiser which consists of securing copy each month, sending it to the printer, obtaining proof, sending the proof to the advertiser and upon its return to cause the printer to make the corrections. In addition, inasmuch as the journal accepts no advertising that is unreliable or not in conformity with the rules of the American Medical Association Council on Pharmacy and Chemistry, all such copy must be carefully read and the Council's published reports examined to ascertain if the drug or preparation has been approved. We are not then through with our advertising affairs; monthly 'dummy pages' and copy instructions must be prepared for the printer so that he can make up the advertising forms allocating each ad to its specified place for which the advertiser pays. Then, when the month's issue is mailed, entries of sales are made on our ledger, bills made out and remittances credited. To cite these details is easy, to execute them consumes much time and labor. Our advertising income in 1928 was \$8,474.13. Were it not for this income the present journal could not be sent to our members without an increase in dues of \$2.50 per member."—*The New York State Journal of Medicine*, May 1929.

Yellow Fever Research Continues.—In a well-appointed special station at Lagos, Nigeria, in a British institute at Accra on the Gold Coast, in a laboratory in Bahia, Brazil, and in quarters provided by the Rockefeller Institute for Medical Research in New York, investigators under the auspices of the Foundation have continued studies of the nature of yellow fever, methods of detecting its presence, the kinds of mosquitoes by which it is transmitted, the breeding habits of these insects, and the possibilities of protecting nonimmunes against infection. The question as to whether the African and American yellow fevers are two different diseases or one and the same has been kept constantly in mind.

Some of the preliminary results were published in technical journals during 1928. Other papers will follow. While no specific causative agent for the disease has been found, knowledge about the virus has made some progress. The identity of African yellow fever with the American type is now almost completely established. Experiments with mosquitoes have proved that, in Africa at least, the *Aedes aegypti* is not the only means of transmission. Some of its close cousins are able to carry the infection. There is even reason to think that an entirely different kind of mosquito may also be found guilty. Certain tests seem to indicate that virus in blood may find its way through even the unbroken skin of a monkey or possibly of a man and thus directly cause infection.—*Information Service of the Rockefeller Foundation*.

MEDICINE TODAY

Current comment on medical progress, discussion of selected topics from recent books or periodic literature, by contributing members.

Dermatology

Trauma as Localizer of Systemic Dermatoses.—The above caption may sound technical, but it bears directly on a very important and common clinical problem.

Trauma has always been recognized as an important etiologic factor in producing local lesions. For instance, the stimulating effect of local traumatization on the causation of benign and malignant growths is a well-known fact.

Also the facility of production and inoculation of local infection through superficial traumatization of the skin, such as scratches and abrasion, is one of the oldest empirical observations now integrated into bacteriologic inoculation technique.

That the local infection so engrafted may become systemic and generalized is well known, but what seems to be not sufficiently known to the general profession is the fact that the pathogenic *modus operandi* may proceed in the reverse order and that the latent systemic infection or toxemia may break out on the surface in the regions submitted to local traumatization.

This clinical phenomenon not uncommonly gives rise to diagnostic errors because of the prevailing tendency to overemphasize the diagnostic significance of clinical history at the expense of diagnostic possibilities suggested by the objective examination of skin lesions.

In these cases the history of preceding trauma stands out so prominently, and the localization of the lesions limited to the traumatized regions easily misleads the unaware practitioner in a diagnosis of dermatosis of local traumatic origin, particularly so if the laboratory report happens to be negative.

A case strikingly illustrating the point under discussion has been recently observed by the writer.

A woman, fifty-three years of age, was referred for diagnosis of a peculiar, disfiguring skin eruption of strictly symmetrical distribution involving the circumoral region and both nasolabial spaces. The patient gave a history of four successive operations in a year's time, necessitating several hours of anesthetics. The striking feature of the case was that the eruption was strictly limited to the parts covered by the anesthetic cone. To complicate matters, the eruption, according to the patient's statement, developed shortly after the last administration of the anesthetic.

A seemingly plausible diagnosis of a dermatitis due to an external irritation was made by the attending surgeon. After the eruption failed to clear up in seven weeks under local bland applications, the patient was referred for diagnosis.

In spite of the traumatic history and localization, the morphologic study of the skin lesions

detected features suggestive of an infectious granuloma, such as dusky red color, soft smooth surface, serpiginous border, multiple discrete nodules, etc.

Latent syphilis was suspected, and in spite of the negative Wassermann test the patient was put on the specific treatment of intramuscular mercurial injections and potassium iodid. In four weeks' time the eruption cleared up beyond recognition.

The clinical lesson of the case is: The latent syphilitic infection was not sufficiently virulent to break through the threshold of latency, and it required a stimulus of local traumatization and irritation to precipitate the breaking out on the surface of the localized cutaneous syphilid.

A brilliant experimental demonstration of the above enunciated clinical principle was recently published by Fried and Segal¹ of Moscow, Russia, who have produced the following experiments: In rabbits, an area of skin from ten to fifteen centimeters in diameter was shaved or clipped and subsequently scarified with sand paper. From 2 to 5 cubic centimeters of an emulsion of trichophyton gypsum was then injected intravenously into the animals. Of the twenty-nine animals used in the experiments, eleven, or 38 per cent, developed cutaneous lesions confined to the shaved and scarified areas only.

The confinement of the lesions to the skin in these experiments, in their opinion, is due to the trauma of the wall of the papillary capillaries, which permits the parasite to migrate into the skin, where it manifests its pathogenic properties.

The clinical principle enunciated above is of great practical importance in industrial medicine. Not uncommonly a patient with a skin eruption, localized on the parts exposed to occupational irritants, is refused a claim for compensation, and dermatosis is declared non-occupational because it proved to be of systemic origin.

Keeping in mind the potentiality of trauma as localizer of systemic dermatoses would contribute much toward a correct interpretation and just solution of these cases.

These cases should be considered compensational because the occupational irritant serves as an actual and, at times, the sole factor in breaking down the systemic resistance, causing the latent systemic condition to break through the threshold of latency and localizing it on the parts exposed to occupational irritants.

MOSES SCHOLTZ, Los Angeles.

REFERENCE

1. Fried and Segal: Arch. Dermat. and Syph., January 1929.

Bacteriology

Functional Diagnosis of the Reticulo-Endothelium.—In addition to the highly specialized endocrines of current nomenclature, several biochemists have postulated less specialized tissues of internal secretion widely distributed throughout the body in the form of the reticulo-endothelial system. Immunologists in particular have been interested in this hypothetical somatic endocrine as the possible source of specific antibodies. That this system may in time become of diagnostic importance is indicated by the reticulo-endothelial functional test recently proposed by Wilensky of Lenin Institute for Medical Research, Kasan, Russia.¹

The colloidal dye, Congo red, injected intravenously into rabbits, is rapidly removed from the blood by a process that we may refer to, figuratively, as colloidal phagocytosis by the capillary endothelium and related cells. At the end of an hour less than 20 per cent of the injected dye is demonstrable colorimetrically in the circulation. In rabbits whose reticulo-endothelial functions have been reduced or inhibited by intravenously injected diphtheria toxin or living staphylococci 45 per cent of the injected colloid may be demonstrable at the end of an hour.

Applying this test clinically, Wilensky reports that one hour after intravenous injection of his routine test dose (10 cubic centimeters 1 per cent Congo red), 30 per cent of the dye is present in the normal circulation of man, 50 per cent in patients with mild bacterial infections, and as high as 80 to 100 per cent in patients suffering from severe infections. There is a suggestion in his data that the percentage of retained colloid is an approximate measure of severity and prognosis.

Whether or not the test is harmful or beneficial to the patient, Wilensky does not say. There seems no reason, however, why a test of this type should not be developed along both diagnostic and therapeutic lines.

W. H. MANWARING, Stanford University.

REFERENCE

1. Wilensky, L. J.: *Für Lehre der Functionellen Diagnostik des Reticulo-Endothelapparates*, Ztschr. f. d. ges. Exper. Med., 1927, Vol. liv, 257.

Orthopedics

Claw-Toes.—The term "hammer-toe" is properly applied to toes so deformed which are traceable from childhood, and are, most likely, inherited because they can invariably be traced in the family tree. The hammer-toes may thus be regarded as a primary congenital deformity, and not be attributed to faulty shoe-wearing, since it can be diagnosed long before the foot has even been shod. Toe deformities which simulate hammer-toes, but are produced by other causes such as hereditary and intra-uterine defects, are better termed "claw-toes."

There is, primarily, a weakness or a paralysis of the interossei muscles of the lesser toes, and

a similar muscle defect of the abductor and adductor hallucis and both short flexors of the big toe. This inefficiency may be a local manifestation of a remote pathologic lesion, as in poliomyelitis, progressive muscular dystrophy, spina bifida, or it may result from local harmful influences, such as short shoes and socks, which force the toes into extension, ultimately producing a contracture of the extensors and a weakness and overstretching of the flexors of the toes. Claw-toes may be a sequence of metatarsal arch depression, and be associated with hallux valgus and minimus digitus varus; in these cases the flattening of the metatarsal arch compresses the interossei muscles, thus disturbing their function, weakening and inactivating them. The interossei muscles, being weak from any of the many causes, lose their flexor action upon the basal phalanges, thus lending to the extensors of the toes more than usual power to act upon the basal phalanges; they become overextended and dorsally displaced, eventually even subluxated.

In course of time the extensor muscles shorten and contract permanently, while the long toe flexors become stretched by this hyperextension; they pull the first and second phalanges into flexion. Thus, the claw-toes are completed. The symptomatology of this defect is too well known to need rehearsing. Be it only added that the patients are so miserable that they are willing to sacrifice the toes if they receive the assurance that they will be freed from the unbearable pain.

Conservative attempts at treatment should always precede any operative measures, and only if the former fail should the latter be recommended. The conservative methods aim to guard against pressure upon the prominent phalangeal heads. There are many ways to secure relief. One way, advocated by Hohman, is not so popular as the others. He attempts to pull the basal phalanges plantarily. He places on the dorsum a piece of felt. This pad is held by adhesive strapping, which pulls the phalanges downward. There are many ingenious conservative methods to relieve pain; but to restore normal relations, to effect a cure, surgical procedures must be resorted to.

Among the operations which should be discarded in these deformities are: (1) amputation of a toe or toes, since worse crippling will be the outcome; (2) forcible manipulation, and cutting the soft tissue on the plantar surface, because these procedures will only give a temporary result. The best operative measure is on the extensors, without or with resection of bone.

If no bone is to be resected the extensor attachments on the basal phalanges are loosened, and the fibrous bands from the tendons are completely detached. After this loosening and detachment of the tendons they are elongated. The contracted capsules should be loosened only on the dorsal side, the plantar surface of the contracted capsule should not be touched. The dislocated phalanges can be easily reduced by traction and kept in position by splinting. I have seen no recurrence in my operated cases.

A. GOTTLIEB, Los Angeles.

STATE MEDICAL ASSOCIATIONS

CALIFORNIA MEDICAL ASSOCIATION

MORTON R. GIBBONS.....President
LYLE C. KINNEY.....President-Elect
EMMA W. POPE.....Secretary

OFFICIAL NOTICE

Prize Papers.—During 1928 six papers were submitted in the Clinical and Research Prize Contest; in 1929 there were none. There seemed no valid reason for the drop in interest, unless it were that insufficient publicity had been given to the contest.

The Council at the meeting at Coronado, after hearing the report of the Prize Committee, authorized the continuance of the contest and suggested that more extended publicity be given these prize awards through the journal, the county societies, section officers, and medical schools, and that the committee be continued.

The rules governing the competition can be obtained from this office by any member interested. Those who wish to deliver papers at the 1930 session may enter said paper in the prize competition.

HOW PAPERS ENTERED IN PRIZE COMPETITION MAY ALSO BE READ AT ANNUAL SESSION

All papers entered in the Clinical or Research Prize Contest are eligible to be read at the annual meeting of the California Medical Association, providing the paper is received by the state secretary before December 20 of the year preceding the annual meeting and approved by the Program Committee. Conversely, papers written primarily for section programs may be entered in the Prize Contest in the following way:

Send two copies of your paper to the state secretary, 1016 Balboa Building, San Francisco, before December 20, with an unsigned note that you wish your essay submitted for a prize and also read at the annual session. Sign your paper with your nom de plume. Also send your name in a sealed envelope with the nom de plume appearing on the outside. Use no stationery that in any way reveals your identity.

The state secretary shall deposit all nom de plume envelopes in a safe until the Prize Committee has made its decision.

The state secretary on receiving a prize paper which is submitted for presentation at the annual session shall submit said paper to the members of the Program Committee. The Program Committee will approve or disapprove it for place on the annual program. The Program Committee will inform the state secretary of its decision, and the secretary will then forward the titles of approved papers to the appropriate section secretary with a simple statement that the paper is acceptable for a place on the program. The Prize Committee will not be informed of this decision and action. A paper may be acceptable for a prize and not for a program, and vice versa.

The Prize Committee shall receive all papers which have been sent to the state secretary, whether approved for publication or not, on or before January 1. The sealed written report of the Prize Committee shall be submitted to the state office before March 1.

The Executive Committee, at the first meeting after March 1 of a given year, shall open the nom de plume

envelopes and furnish the secretary the proper names of the authors for the published annual program.

The Council shall consider the report of the Prize Committee at its first meeting of the annual session, and shall announce the result at the first general meeting of the Association.

It is hoped that many papers will be entered by February 15, 1930, the closing date of the competition.

COMPONENT COUNTY SOCIETIES

FRESNO COUNTY

The regular meeting of the Fresno County Medical Society was held on the evening of May 14, at eight o'clock.

Dr. J. R. Walker reported forty cases of nonsurgical treatment of cataract by the use of the lens extract hypodermically. Report follows: After observation of more than two years on a series of forty reported cases, the results were as follows: eight cases were not improved, the cataract developing to maturity. The rest all showed the cataract had been arrested, and all patients had retained the same vision they had at beginning of treatment or had improved vision. Treatment does not seem to remove the opacity in proportion to the improvement in vision. Doctor Walker considers lens extract a valuable treatment in incipient cataract, or in patients in whom the vision is not reduced below that which permits the continuance of the usual vocation. This paper was discussed by Doctors Montgomery and Hare.

Doctor Barkan of San Francisco gave an instructive talk on "Glaucoma and Its Operative Treatment in the Light of Recent Advances." He showed several slides to illustrate the increase in the field of vision, following Elliot's operation. This was discussed by Doctors Madden, Trowbridge, Walker, Mitchell, and Hare.

* * *

The regular meeting of the Fresno County Medical Society was held after dinner at the Californian Hotel on the evening of June 4. Twenty-five members were present.

Dr. G. W. Walker, a member of the Public School Board, told that advice was being given by school physicians to school nurses in treatment of children at school that children be not treated for infections that are not contracted at school.

A motion was made by Dr. C. O. Mitchell, seconded by Doctor Aller and carried, that the Constitution of the Fresno County Medical Society be changed as follows:

Article 12, paragraph 1—The secretary shall call the roll of the Board of Governors at each meeting and keep a written record thereof.

Paragraph 2—Any member of the Board of Governors who absents himself from three consecutive meetings shall *ipso facto* terminate his membership therein.

The scientific program was carried out by members of the society. Dr. C. O. Mitchell described an interesting case in which he and Dr. J. A. Montgomery were associated. The patient was a boy twelve years of age who became ill during the time that other members of the family were having the mumps. There was some swelling of the parotid gland which quickly cleared up, but was followed in about a week

by headache, neck rigidity, positive Kernig, and other signs of meningitis. The blood count showed 7500 white cells of which 60 per cent were polymorphonuclear leukocytes. Lumbar puncture showed the spinal fluid to be under some increase of pressure with 200 white cells to the cubic millimeter of which 90 per cent were lymphocytes. Following the lumbar puncture there was rapid recovery from the symptoms and patient was well within twenty-four hours. Doctor Montgomery, looking through the literature, found a number of similar cases of mump meningitis showing the same recovery after lumbar puncture.

Dr. W. E. R. Schottstadt described the case of a girl twelve years of age who developed a double lobar pneumonia, following a few days of bronchitis. The child was seen at the office, when diagnosis was confirmed by x-ray. Temperature was 104½ and respiration 50. The patient was sent to the hospital. She rapidly became cyanotic. Four ounces of 1 to 5000 potassium permanganate was given by rectum, repeated in four hours. During the night the child went through a crisis and recovered. This treatment was based on a report appearing in the *Annals of Internal Medicine* in which twenty-three cases were treated by this method, twenty-one recovering and two deaths. In discussion of this case, Doctor Dau said he had some very good results with intravenous injections of 100 cubic centimeters of 65 per cent ethyl alcohol.

Dr. F. R. Ruff showed some interesting slides: (1) partial twins; (2) pyelograms; (3) ruptured diverticulum. He also illustrated the difference between bovine and human tuberculosis.

J. M. FRAWLEY, *Secretary*.

✽

SACRAMENTO COUNTY

The regular meeting of the Sacramento Society for Medical Improvement was held at the Hotel Senator on Tuesday evening, May 21, and called to order by President Pope at 8:40 o'clock.

The minutes of the previous meeting were read and approved.

One case was reported by Doctor Titus of a young man who showed the effects of tularemia. One month ago, while in Nevada, he killed and skinned a rabbit. At that time there was a small abrasion on the index finger of the right hand. Three days later he had a fever, prostration, and malaise. Two days later he had a general adenopathy. He continued to feel chilly every day, and likewise had epistaxis and emesis. This condition cleared very slowly. At the time of the meeting he felt well, but still had large glands in the right axilla and epitrochlear region.

The paper of the evening, "Pitfalls of the Doctor—Cause and Prevention of Malpractice Suits," was given by Dr. R. Gray of the Aetna Life Insurance Company of San Francisco.

Doctor Gray stated that malpractice insurance is purchased to protect the doctor when he is accused of having damaged the body of his patient by the wrongful practice of his profession. This protection is given, first, by defending him with every legal means possible and, second, by paying the claims if such should be paid. He stressed that the proper legal defense is the first service promised.

In case a judgment is rendered, or when the doctor has been at fault, the insurance company settles, and for this reason the policy held by the doctor should not be small.

The reasons for malpractice suits vary, and comprise suits due to unfortunate outcome of cases, to unauthorized work (such as removing tissue when consent has not been given), to an effort to collect a bill—and this last constitutes about 13 per cent of the claims. Careless criticism by other doctors accounts for about 18 per cent.

The paper caused much discussion and many questions, and these questions were answered by Doctor Gray.

The application for membership of Dr. J. Miyasaki was read and voted upon, and Doctor Miyasaki was elected.

The applications for memberships from Doctors Wayne Pollock and L. Barrette were read for the first time.

A communication from Dr. C. Haw, president of the dental society, was read. Doctor Haw, in behalf of the dental society, invited the members of the medical society to witness the showing of a film taken of living tissue and to be shown at the Sutter High School on the evening of June 10.

The report of the board of directors was read. The board of directors recommended that the society sponsor a tea given at the Crocker Art Gallery during the Nurses' Convention, and defray expenses not to exceed \$100.

It was moved and seconded that the action of the board of directors be accepted. Much discussion followed, and a standing vote was as follows: for, 12; against, 16.

Doctor Schoff, chairman of the Library Committee, reported that he and several others had met with the chairman of the Board of Education in regard to the proposed medical library in Sacramento. No action was taken, but the matter probably will be taken up two years later, when the legislature again meets.

It was moved and seconded that the report be accepted. Motion carried.

There being no further business the meeting adjourned.

H. SCHLUTER, *Secretary*.

✽

SAN BERNARDINO COUNTY

Minutes of the San Bernardino County Medical Society meeting held at Loma Linda on April 2.

The meeting began with the inspection of the new hospital at 6 p. m.

A meeting of the staff of the County Hospital was held at 6:30 o'clock; dinner was served at 7:15 o'clock. There were fifty-eight present.

The following program began at 8:15 o'clock: "Relation of Diet to Arteriosclerosis and Nephritis," by Dr. H. M. Walton, Loma Linda. Discussion opened by Dr. G. S. Landon, San Bernardino.

"Cardiac Arrhythmias," by Dr. W. E. Macpherson, Loma Linda. Discussion opened by Dr. Gayle Moseley, Redlands.

"Various Aspects of Allergy in Southern California," by Dr. A. R. Roos, Loma Linda. Discussion opened by Dr. A. T. Gage, Redlands.

Minutes of the previous meeting were read and approved. Doctor Gage acted as secretary from this point on.

Meeting adjourned at 10:30 o'clock.

In the absence of Doctor Walton, Doctor Morton of Arrowhead opened the program.

E. J. EYTINGE, *Secretary*.

✽

SAN JOAQUIN COUNTY

The stated meeting of the San Joaquin County Medical Society was held Thursday evening at 8:30 o'clock, June 6, in the Medico-Dental Club, 242 North Sutter Street, Stockton.

The meeting was called to order at 8:30 o'clock by Dr. C. V. Thompson, president, presiding.

Twenty-five were in attendance. Those present were: Doctors N. P. Barbour, J. W. Barnes, J. F. Blinn, C. A. Broadus, H. S. Chapman, Fred J. Conzelmann, J. F. Doughty, Linwood Dozier, F. T. Foard, P. B. Gallegos, H. E. Kaplan, B. M. Krout, G. H. La Berg, Grace McCoskey, R. T. McGurk, F. S. Marnell, B. J. Powell, Dewey R. Powell, George H. Sanderson, F. B. Sheldon, John J. Sippy, C. V. Thompson, A. L. Van Meter, R. L. Owens, Paul R. Noetling; Mr. M. P. Shaughnessy, attorney for the

society, and Dr. Lovell Langstroth, guest and speaker of the evening.

The minutes of the previous meeting were read and approved. The Committee on Admissions reported favorably on the application for membership of Paul R. Noetling, of Linden.

In accordance with the Constitution the chair declared Doctor Noetling duly elected an active member of the society.

The application of membership of Dr. Ione Pinney was read and referred to the Committee on Admissions.

The transfer of Dr. Thomas C. O'Connor, Jr., from Placer County Medical Society was read. Moved by the secretary that Doctor O'Connor be accepted a member on the transfer from Placer County Medical Society. The motion was duly seconded and carried.

A communication from the American Medical Association relative to "The Hospital Number of the Journal" was read and ordered filed.

A communication of the California Tuberculosis Association relative to a course for the study of tuberculosis was read and ordered filed.

Dr. B. J. Powell and Dr. J. W. Barnes, delegates to the state convention, presented their report. The report was read by Doctor Powell.

Doctor McGurk, chairman of the Legal Committee, read the report of the committee. This report was discussed by Mr. Shaughnessy.

It was moved and seconded that the report be accepted. The motion was duly seconded and carried.

Dr. Dewey R. Powell gave notice that he would introduce an amendment to the Constitution at the next meeting of the society that the section on ethics be brought in accord with the ethics of the California Medical Association and the American Medical Association.

The chair presented Dr. Lovell Langstroth of San Francisco, who spoke on the subject, "Constructive Medicine." The beginning of all treatment is diagnosis. Normal health, joy, and happiness depend on satisfactory adjustment with the environment. Constructive medicine deals with the individual as a whole, healing of the physical and mental ills. This may involve the administration of medicine, regulation of diet, prescribing proper exercises, performing an operation or a psychoanalysis of the patient's behavior. Many of the degenerative diseases—arteriosclerosis, arthritis, and the like—can be prevented or much improved by proper diet, exercises, and the correction of postural defects. Exercises make for coordination in other ways. Movements of the body give a power of freedom for expression of the personality. Rhythmic movements free the personality. The psychological aspect of every patient must be carefully considered. The neglect of the mental aspect of the patient by the physician is largely responsible for the existence of numerous cults in our big cities. The physician to be successful must consider the mental aspect of his patient, and the patient's mental development from childhood. According to the reaction to environment, we recognize two types of individuals, the extravert and introvert. The latter is the shut-in personality, in-growing, shy, sensitive, quiet, day-dreaming, and precise. The former is the shut-out personality, outgoing, spontaneous, frank, domineering, boastful, and aggressive.

The speaker defined the inferiority complex as a feeling of defeat, a sense of failure, and its correlate, the superiority complex, as an overcompensation, a boast. The first is self-abasement, the other a mask for it—a bluff. Many of our difficulties in life come from maladjustment; from the mismanagement of the common psychological mechanisms of adaptation, such as poor habit formations in childhood, floundering in sex adjustment, and an unhealthy trend in the digestion of life's experiences. The general practitioner is frequently little interested in the psychological side of his patients; he tries to evade it, and yet every one of his patients is a psychological problem. The phy-

sician does not care to discuss psychologic medicine, largely because he himself is full of inhibition, conflicts and complexes that need adjusting. A good psycho-analytic examination of himself would lead him to a better understanding and appreciation of the mental problems of his patients. The speaker illustrated his talk by citing histories of patients from his practice.

Doctors Sanderson, Doughty, Broadus, and Dozier discussed the subject.

The chair expressed the appreciation and thanks to the speaker of the evening.

There being no further business the chair declared the meeting adjourned at 10:15 o'clock.

FRED J. CONZELMANN, *Secretary*.

✽

SAN MATEO COUNTY

At the regular meeting of the San Mateo County Medical Society, held at Dr. F. H. Smith's home in San Bruno on May 15, the following officers were elected for the current year 1929-30: Harper Peddicord, president; Emir Alan Benner, vice-president; Benjamin H. Page, secretary-treasurer.

Dr. E. F. Ziegelman gave a very comprehensive report of the state convention. Dr. H. Harris gave a very interesting talk on "Medical History in California."

The society is indebted to Mrs. F. H. Smith for a most enjoyable evening.

B. H. PAGE, *Secretary*.

✽

SANTA BARBARA COUNTY

The May meeting of the Santa Barbara County Medical Society was held in the auditorium of the nurses' home of the Cottage Hospital on Monday, May 13.

The minutes of the previous meeting were read and approved.

The secretary then read the applications of Howard Eder and C. C. Park; also application of W. H. Conser of Guadalupe for transfer from the Henry County Medical Society of Illinois.

The membership of the northern part of the county, headed by Doctor Jones, extended an invitation to the society to have the regular June meeting at Santa Maria.

Doctor Brush then introduced Doctors Miller and Thearle of Los Angeles, who gave a most comprehensive discussion on chest surgery, and demonstrated by a series of wonderful x-ray pictures the technique and results of severing of the phrenic nerve, and thoracoplasty, for the relief of advanced tuberculosis.

There being no further business the meeting adjourned.

* * *

The June meeting of the Santa Barbara County Medical Society was held at the Santa Maria Club, Santa Maria, Monday evening, June 10. Barbecued steaks were served at seven o'clock, and an enjoyable time was had in feasting and telling stories.

At the conclusion of the dinner the society went into executive session and the minutes of the previous meeting were read and approved.

Doctor Conser of Guadalupe, a transfer from Henry County Medical Society of Illinois, and Doctors C. C. Park and Howard Eder were unanimously elected to membership.

There were present at the meeting eighteen members of the society and six guests.

At the conclusion of the executive session Dr. George Piness of Los Angeles gave a most interesting and instructive résumé on asthma, which was followed by discussion and questions from all members present.

There being no further business the meeting adjourned.

WILLIAM H. EATON, *Secretary*.

WOMAN'S AUXILIARY OF THE CALIFORNIA MEDICAL ASSOCIATION

Upon call of Dr. William E. Duffield of the California Medical Association a meeting was held in the children's dining room of Hotel del Coronado on May 7, 1929, at 10 a. m., for the purpose of organizing a woman's auxiliary of the California Medical Association.

Present: Dr. William Duffield; Mrs. J. M. McColl, 3544 Thirtieth Street, San Diego; Mrs. Edmund Butler, 2539 Vallejo Street, San Francisco; Mrs. Robert Alway Peers, Colfax; Mrs. W. H. Geistweit, Jr., 3212 Bancroft Street, San Diego; Mrs. George G. Hunter, 356 South Occidental Boulevard, Los Angeles; Mrs. Henry S. Rogers, Petaluma; Mrs. S. H. Miles, Olive View Sanatorium; Mrs. J. M. McCullough, Contra Costa; Mrs. Jesse Walter Barnes, 1536 North Hunter Street, Stockton; Mrs. A. L. Van Meter, 22 East Adams Street, Stockton; Mrs. Frederick F. Gundrum, 2214 Twenty-first Street, Sacramento; Mrs. Barton J. Powell, 44 West Acacia Street, Stockton; Mrs. Harold Gobar, Fullerton; Mrs. Harry Zaiser, Orange County Hospital, Orange; Mrs. R. A. Cushman, 632 North Broadway, Santa Ana.

Doctor Duffield stated that the general purpose of the meeting was to organize the wives, sisters, and daughters of the members of the California Medical Association into a state society composed of county groups. He read the constitution of the National Woman's Auxiliary.

By general consent Mrs. S. H. Miles of Olive View Sanatorium acted as chairman pro tem.

By general consent Mrs. R. A. Cushman of Santa Ana acted as secretary pro tem.

By unanimous vote those present signified their willingness to join such an organization and assist in its formation.

The chairman, Mrs. Miles, stated that it would be impossible for her to attend any further meeting at this convention.

Mrs. Frederick F. Gundrum was nominated and duly elected to serve as vice-chairman in the absence of Chairman Mrs. Miles.

By unanimous consent the meeting was adjourned to Wednesday noon luncheon, and Doctor Duffield was requested to issue a call to all the visiting women eligible by posting a notice on the official blackboard and announcing the time and place of meeting at the San Diego annual session of the California Medical Association.

CLARA R. CUSHMAN,
Secretary pro tem.

* * *

Coronado Beach, California,
May 8, 1929.

The adjourned meeting of the women proposing to organize a woman's auxiliary to the California Medical Association was held in the breakfast room of Hotel del Coronado on the above date at 12 noon.

Vice-chairman Mrs. Frederick F. Gundrum presided.

The vice-chairman called the meeting to order and read a constitution as recommended by the National Woman's Auxiliary of the American Medical Association. It was moved, seconded, and unanimously carried that the constitution be adopted as read.

Following is the constitution as adopted:

Underlying Principles that Shall Govern the Formation and Regulation of the Woman's Auxiliary of the California Medical Association

NAME AND OBJECT

Section 1. The name of this organization shall be "The Woman's Auxiliary of the California Medical Association."

Sec. 2. The purposes of the Woman's Auxiliary are to bring into more active affiliation the wives, adult sisters and adult daughters of the members

of the California Medical Association, to encourage kindly social relationships, and to carry on public health education, and philanthropic medical work.

The Woman's Auxiliary, through its memberships in various lay organizations, shall actively contact with any public health work which is an activity of such organization.

COMPONENT SOCIETIES

The Woman's Auxiliary of the California Medical Association, shall consist of all the County Woman's Auxiliaries which are affiliated with the different county medical societies.

MEMBERS

The wives and adult sisters and daughters of the members of the California Medical Association (active, associate, affiliate, or honorary) alone, shall comprise the membership of the California Woman's Auxiliary.

OFFICERS OF STATE AUXILIARY AND ADVISORY BOARD

Section 1. The officers of the State Auxiliary shall be: A president, a first vice-president, a second vice-president, a secretary-treasurer; and these officers, with the president and secretaries of the component county auxiliaries, shall be constituted a board of directors of the state organization.

Sec. 2. The president, the president-elect, and the secretary of the California Medical Association shall be ex-officio members of the said board of directors, and shall act, but shall not have the right to vote, their function being largely of an advisory nature on this board.

OFFICERS OF COUNTY AUXILIARIES AND ADVISORY BOARDS

Section 1. The officers of a state or a component county auxiliary shall be: A president, a first vice-president, a second vice-president, and a secretary-treasurer. These officers shall be constituted as an executive committee.

Sec. 2. For each component county auxiliary there shall be an advisory board consisting of the president, the vice-president, and the secretary of the respective county medical society. The Woman's Auxiliary of a county shall not speak in the name of the medical profession except with the sanction of this advisory board and of the proper officers of the county medical society.

MEETINGS

The annual meeting of the State Auxiliary shall be held during the annual session of the California Medical Association and at the same place. The time and place of meeting shall be set after consultation with the secretary of the California Medical Association.

County auxiliaries shall aim to meet at least once every four months. County auxiliaries shall decide when and where they desire to meet. Conjoint meetings with a county medical society shall be held only if the county medical society so requests. Members of auxiliaries shall not, as individuals, attend county medical society meetings except on invitation from the proper county medical society officials.

DUTIES

The duties of all officers shall be those which usually pertain to such office.

The State and County Auxiliaries shall keep their respective advisory boards informed of the work of their auxiliaries and shall send a copy of the minutes of each meeting of the auxiliaries to the secretary of the State and County Medical Society.

No provision of these regulations shall be amended without the approval of the Council of the California Medical Association.

* * *

The vice-chairman then called for nominations of officers from the floor.

Mrs. Henry S. Rogers of Petaluma was nominated president. Moved, seconded, and unanimously carried, that nominations be closed and the secretary in-

structed to cast the ballot in favor of Mrs. Rogers, which was done.

Mrs. W. H. Geistweit, Jr., of San Diego was nominated first vice-president. Moved, seconded, and unanimously carried, that nominations be closed and the secretary instructed to cast the ballot in favor of Mrs. Geistweit, which was done.

Mrs. John Hunt Shephard, 145 South Twelfth Street, San Jose, was nominated second vice-president. Moved, seconded, and unanimously carried, that nominations be closed and the secretary instructed to cast the ballot in favor of Mrs. Shephard, which was done.

Mrs. R. A. Cushman of Santa Ana was nominated secretary-treasurer. Moved, seconded, and unanimously carried, that nominations be closed, and that the ballot be cast in favor of Mrs. Cushman, which the chairman ordered done.

The following were present:

NAME	Address
Mesdames	
Alberty, W. M.	4040 Fairmont Avenue
Austin, M. O.	34 Twenty-fifth Avenue
Bramkamp, A. L.	
Barry, George L.	507 South Second
Burks, Floyd L. R.	2221 San Joaquin
Cummins, W. T.	107 Ashbury Street
Clark, C. W.	
Churchill, J. F.	3264 Curlew Street
Cross, W. W.	1126 Excelsior Avenue
Card, Thomas A.	216 Oakwood
Coleman, H. R.	811 Jefferson Street
Clough, F. E.	304 Platt Building
Cushman, R. A.	632 North Broadway
Davis, K. S.	119 South Clark Drive
Ewer, Edward N.	2910 Avalon Avenue
Gray, Roscoe	
Gobar, Harold F.	305 North Richman
Geistweit, W. H., Jr.	3212 Bancroft Street
Gundrum, Frederick F.	2214 Twenty-first Street
Haskell, Pliny F.	441 Main Street
Haas, Sylvan L.	579 Eleventh Avenue
Harding, Maynard C.	4505 Rhode Island Street
Inman, Thomas G.	4547 California Street
Jacobs, E. H.	1804 Westmoreland Boulevard
Kinney, Lyell C.	1831 Fourth Street
Little, T. C.	2475 E Street
Lindsay, W. K.	1027 Tenth Street
Moody, A. M.	2924 Pierce Street
Modern, F. S.	
Myers, Thomas C.	316 South Rossmore Avenue
McCullough, J. M.	
McColl, J. M.	3544 Thirtieth Street
O'Neal, Robert	304 Twenty-fourth Street
Percy, James F.	1030 South Alvarado
Rogers, Henry S.	
Roblee, W. W.	177 Orange Street
Stoddard, Thomas A.	851 California Street
Shilling, Jerome W.	147 North Rosemont
Stein, Charles	509 South Somerset Boulevard
Stark, J. H.	2340 Lake Shore Boulevard
Shephard, John Hunt	145 South Twelfth Street
Stephens, Philip	4916 Franklin
Tebbetts, H. B.	3278 Wilshire Boulevard
Van Meter, A. L.	22 East Adams
Woolsey, J. H.	684 Funston Avenue
Zaiser, Harry	Orange County Hospital
Zook, A. Z.	Burbank

By general consent the dues for membership in the society were fixed at \$1 per year.

RESOLUTION

The following resolution was unanimously adopted, and the secretary instructed to communicate it to the proper bodies:

Whereas, We, the members of the Women's Auxiliary of the California Medical Association here assembled, wish to express our appreciation for the wonderful entertainment which has been given to the wives, sisters, and daughters of the members of the medical associations convened at Coronado Beach; now, therefore, be it

Resolved, That we extend our thanks to the people of San Diego and Coronado who have assisted in this entertainment, particularly to the San Diego County

City	County
San Diego	San Diego
San Francisco	San Francisco
Banning	Riverside
San Jose	Santa Clara
Fresno	Fresno
San Francisco	San Francisco
San Anselmo	Marin
San Diego	San Diego
Oakland	Alameda
Riverside	Riverside
Napa	Napa
San Bernardino	San Bernardino
Santa Ana	Orange
Los Angeles	Los Angeles
Oakland	Alameda
Yosemite	Mariposa
Fullerton	Orange
San Diego	San Diego
Sacramento	Sacramento
Artesia	Los Angeles
San Francisco	San Francisco
San Diego	San Diego
San Francisco	San Francisco
Los Angeles	Los Angeles
San Diego	San Diego
San Diego	San Diego
Sacramento	Sacramento
San Francisco	San Francisco
Arrowhead Springs	San Bernardino
Los Angeles	Los Angeles
Crockett	Contra Costa
San Diego	San Diego
Santa Monica	Los Angeles
Los Angeles	Los Angeles
Petaluma	Sonoma
Riverside	Riverside
San Francisco	San Francisco
Los Angeles	Los Angeles
Bellflower	Los Angeles
Oakland	Alameda
San Jose	Santa Clara
Hollywood	Los Angeles
Los Angeles	Los Angeles
Stockton	San Joaquin
San Francisco	San Francisco
Orange	Orange
Los Angeles	Los Angeles

Medical Society, and to the women associated with them.

By unanimous consent the secretary was instructed to write a letter to Mrs. S. H. Miles, temporary chairman, thanking her on behalf of the auxiliary for lending her assistance in the formation of the society.

By unanimous consent Mrs. Gundrum was given a rising vote of thanks for officiating so efficiently as vice-chairman of the organization meeting.

Upon motion the meeting adjourned.

(Signed) CLARA R. CUSHMAN,
Secretary.

CHANGES IN MEMBERSHIP

New Members

Alameda County—Earl H. Daggett, John N. Ewer, Charles L. Freytag, James Hilgesen, Harold R. Smithies, Herman Schwartzmann.

Contra Costa County—Gaines L. Coates, Jr.

Kern County—A. L. Johnson, Louis A. Packard.

Los Angeles County—Carlyle L. Ahrens, Peter H. Blong, Herbert T. Brooks, Ben H. Chamberlain, Henry L. Charles, Peter T. Conlan, Clarence S. Cook, Robert J. Dostal, Paul S. Dougherty, Earl Eames, C. E. Fortin, Peter Adolph Gallant, B. H. Hager, Clemen Hamer, W. J. Harrison, Ernest D. Johnson, Carl E. Krugmeier, W. O. Leach, Samuel Levy, D. R. MacColl, Ronald J. Macdonald, Harry A. Miller, H. R. Mulligan, Rafael S. Olsen, Byron Palmer, J. E. Ragsdale, Orin J. Riddell, A. B. Ross, Lonzo V. Smith, Samuel N. Sperling, Arthur G. Tullar, John W. Weber, Daniel L. Woods.

Merced County—Bruce Earl McDowell.

Napa County—Irving E. Charlesworth.

Orange County—George C. Ruble, Elizabeth W. Tock.

Riverside County—Russell M. Gray.

San Bernardino County—Alma L. Goude.

San Diego County—Lloyd A. Kennell.

San Francisco County—Adolphus A. Berger, Paul G. Capps, Hilda M. Davis, Abelson Epstein, Anita E. Faverman, Frederick S. Foote, Ramon Gilbert, Joseph B. Giovinco, Louis Jacobs, Clark M. Johnson, Alma S. Pennington, Catherine M. Quinlan, Joseph H. D. Roger, Harry A. Somerfield, Howard W. Stephens.

San Joaquin County—Paul R. Noetling, Ione Pinney.

Santa Barbara County—Howard L. Eder, Charles C. Park.

Transferred Members

Francis R. Hendricks, from San Francisco to Ventura County.

Resignations

Evelyn R. Ott, San Francisco County.

Roger I. Clapp, San Diego County.

Deaths

Crabtree, Hezediah T. Died at San Francisco, May 21, 1929, age 72 years. Graduate of Northwestern University Woman's Medical College, Illinois, 1899. Licensed in California, 1901. Doctor Crabtree was a member of the San Francisco County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Kelsey, Arthur Louis. Died at Los Angeles, May 19, 1929, age 68 years. Graduate of Jefferson Medical College of Philadelphia, Pennsylvania, 1888. Licensed in California, 1888. Doctor Kelsey was a member of the Los Angeles County Medical Association, an honorary member of the California Medical Association, and a Fellow of the American Medical Association.

O'Brien, Aloysius Paul. Died at San Francisco, June 13, 1929, age 62 years. Graduate of University

of California Medical School, San Francisco, 1885. Licensed in California, 1890. Doctor O'Brien was a member of the San Francisco County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Reed, Clarence E. Died at San Francisco, June 2, 1929, age 66 years. Graduate of University of California Medical School, San Francisco, 1883. Licensed in California, 1884. Doctor Reed was a member of the Shasta County Medical Society, the California Medical Association, and the American Medical Association.

Six, Clarence Logan. Died at Santa Barbara, May 28, 1929, age 53 years. Graduate of Starling Medical College, Columbus, Ohio, 1901. Licensed in California, 1901. Doctor Six was a member of the San Joaquin County Medical Society, an affiliate member of the California Medical Association, and the American Medical Association.

NEVADA STATE MEDICAL ASSOCIATION

R. R. CRAIG.....President
W. A. SHAW.....President-Elect
H. A. PARADIS.....First Vice-President
R. P. ROANTREE.....Second Vice-President
HORACE J. BROWN.....Secretary-Treasurer
R. P. ROANTREE, D. A. TURNER,
S. K. MORRISON.....Trustees

COMPONENT COUNTY SOCIETIES

WASHOE COUNTY

The regular June meeting of the Washoe County Medical Society took place at the City Hall, Reno, June 11, Dr. J. L. Robinson, president, in the chair.

Several communications were read and given over to the appointed committees for decision and report.

The president proceeded to open the scientific program, which was a symposium on the subject of Appendicitis. The first essayist responded with a statistical report of appendectomies and mortality following the same, as gathered in the state for the past five years. This paper was prepared by Dr. W. L. Samuels, who for many years was the city health officer of Reno, and whose ability in that line gave him a better idea of securing material for the subject. It was not a subject for rhetorical composition, but rather one dealing, as far as could be ascertained, with the cold facts of surgical procedure of this type of disease.

A careful survey on the part of Doctor Samuels, assisted by Doctor Hamer, secretary of the Nevada State Board of Medical Examiners, showed that there were many inadequacies in exactness of reports as furnished the department by the physicians of the state. Some were quite complete for the counties named, while from some counties there were no reports at all. The state board secretary is now making an earnest effort to correct these incomplete reports by insisting that the proper data be included in every death report sent in. We wish him success. The following is the report of cases of appendectomies done, with number of deaths following operation by counties where reports were secured:

Counties	Appendectomies	Deaths
White Pine	862	9
Washoe	804	25
Elko	234	8
Churchill	35	3
Humboldt	34	4
Mineral	6	0
Douglass	1	0
Lyon	1	1
	1977	50

There were seven deaths reported from the state at large where no operation had been done. This brings the percentage of deaths for the five past years

in Nevada to a little over 2 per cent. According to the statistics collected by Murphy, and later substantiated by Deaver in his 1923 edition of "Excursions Into Surgical Subjects" wherein the deaths following appendectomies were over 10 per cent in the United States, it would appear that the grade of work done in this special line of surgery in Nevada will not suffer by comparison with that done elsewhere.

Dr. C. W. West followed with a paper on "The Suppurative Appendix and Treatment." Doctor West said he realized that there was a great difference of opinion among surgeons as to how to deal with this serious condition; some surgeons advocating radical removal in spite of pus in the abdomen, others advising drainage with the least possible trauma and a supportive treatment destined to conserve the physical strength of the patient. That there were not, in his opinion, any hard and fast set rules of practice, but that each patient was a case unto himself to be treated according to the conditions present, as determined by history, blood and other tests, and the general determination of the possibilities of the patient's resistance. If it appeared that a quick and simple drainage would be best, then drainage was the operation of choice. In the presence of pus and an abnormally located appendix, it would possibly be wiser to drain and wait for another period when the patient was pus-free to do the appendectomy. Doctor West stated that any operation was more a case of the man doing it than the man having it done. Everything depended upon the training, the experience and the judgment of the operator. Some surgeons were born surgeons, and some had it thrust upon them; the essential element in success was the kind of surgeon the patient employed.

The essay was a complete résumé of conditions present in this type of cases and dwelt on well-established rules of both physiology and pathology. The writer was complimented in the discussion upon his able presentation.

The last paper presented was by Dr. Vinton A. Muller on the topographical area wherein the appendix might be found, and the prognosis dependent upon its location. The essayist reviewed the embryological descent of the appendix, and described the various locations in which it might be possible to find the appendix at operation. The retrocecal location was highly dangerous in inflamed appendices, or in those with pus formation, by reason of its burrowing into the mesentery, the tip being covered and lying in an area where resistance was less than in the pelvic situation. The mortality in all cases of appendectomy would depend upon the degree of inflammation or infection present, and especially upon the character of the infection, also upon the time and trauma spent in removing the offending organ. These conditions, with the degree of resistance of the patient, would be the determining factors in making any statement as to the outcome of the case. Doctor Muller made a good presentation of a very hackneyed subject.

The concluding part of the program was the presentation of a cinema kindly loaned the society by Messrs. Davis and Geck of Brooklyn, dealing with "The Relation of Absorbable Sutures to Wound Healing." This was a very educational picture. It showed the consecutive steps of preparation of the ligatures, and further gave considerable space in the picture as to the proper way to place a suture, emphasis being stressed upon the too common error of tying the ligature too tight.

Dr. S. K. Morrison furnished his own machine and operated it, for which service the society not only unanimously thanked Messrs. Davis and Geck, but our own Doctor Morrison as well.

There were thirty-three members and visitors present, many from distant parts of the state, and others from the California border.

The president stated that no meetings would be held in July and August, but that they would be resumed again in September.

THOMAS W. BATH, *Secretary*.

UTAH STATE MEDICAL ASSOCIATION

WILLIAM D. DONOHER, Salt Lake.....President
H. P. KIRTLEY, Salt Lake.....President-Elect
M. M. CRITCHLOW, Salt Lake.....Secretary
J. U. GIESY, 701 Medical Arts Building, Salt Lake.....Associate Editor for Utah

COMPONENT COUNTY SOCIETIES

SALT LAKE COUNTY

The regular meeting of the Salt Lake County Medical Society was held in the Convention Room of the Newhouse Hotel, Salt Lake City, May 13.

Due to the temporary absence of the president, the meeting was called to order by F. A. Goeltz at 8:05 p. m. Fifty-eight members and twelve visitors were present.

Minutes of the meeting of April 22 were read and accepted without correction.

Wilkie Blood presented two cases of acrodynia.

W. R. Tyndale presented a case of undulant fever with microscopic preparation of the *Bacillus melitensis*.

C. M. Benedict and W. A. Pettit commented upon the case of leprosy now isolated at the Salt Lake General Hospital.

The program consisted of a symposium upon "Epidemic Cerebrospinal Meningitis." T. A. Flood gave the history, L. L. Daines discussed the bacteriology, and Orin A. Ogilvie spoke upon the pathology of this disease.

A moving picture of the intestinal peristalsis, prepared by Professors Carlson and Luckhart of the University of Chicago, was then shown through the courtesy of the Deshell Laboratories. L. J. Paul moved that the society extend a vote of thanks to the Deshell Laboratories for their courtesy. Motion was seconded and carried.

John Brown called for a report of the Special Committee on the Community Clinic, which consisted of C. M. Benedict (chairman), John Brown, and M. M. Nielson. E. F. Root was asked to take the chair while President C. M. Benedict made his report. C. M. Benedict said the Community Clinic had been officially closed, and stated that the committee felt that after an unusually thorough investigation that this action was justified, since the Community Clinic no longer served the purpose for which it was intended, and that its equipment was such that it was impossible to care for patients properly. W. F. Beer moved that the report be accepted and the committee be discharged. Seconded and carried.

Meeting was adjourned at 10:30 p. m.

* * *

Monday, May 27, the Salt Lake County Medical Society held a dinner meeting with the Weber County Medical Society in the ballroom of the Newhouse Hotel at 7 p. m. Attendance was 115.

After dinner the meeting was called to order by C. M. Benedict, president of the Salt Lake County Medical Society, who turned the chair over to A. H. Aland, president of the Weber County Medical Society.

The program, which was arranged by the Weber County Medical Society, was as follows:

"Diseases Due to Allergy"—T. D. Cunningham, Denver, Colorado. Discussion by L. A. Smith and L. S. Merrill, Ogden.

"Modern Treatment of Pulmonary Cavitation," Lantern Slides—W. H. Thearle, Los Angeles, California. Discussion by A. C. Callister, Salt Lake City.

F. P. Miller, who was to talk upon the same subject, was unable to attend the meeting.

Meeting adjourned at 10:50 p. m.

* * *

The regular semi-annual business meeting of the Salt Lake County Medical Society was held in the

Convention Room of the Newhouse Hotel, Monday, June 10.

Meeting was called to order at 8 p. m. by President C. M. Benedict. Twenty-seven members were present. Minutes of the meetings of May 12 and May 27 were read and accepted without correction.

Mark Brown showed roentgenograms of "Pelvic Mensuration in Pregnancy." His remarks were discussed by W. F. Beer, Sol Kahn, J. P. Kerby, and E. P. Oldham.

A communication from the Council on Medical Education and Hospitals of the American Medical Association asking for suggestions concerning the cutting down of hospital conferences was read. This communication was discussed by J. P. Kerby, Sol Kahn, and A. C. Callister. A. C. Callister moved that a committee be appointed to draft a resolution and make suggestions regarding hospital conferences and medical society programs. The following committee was appointed by President C. M. Benedict: Sol Kahn (chairman), J. P. Kerby, R. J. Alexander, and William F. Beer.

A communication was read from the Maternal Welfare Committee explaining some of their work on maternal welfare and infant welfare.

A letter of thanks from the Weber County Medical Society for courtesies extended members during the meeting of May 27 was read.

Report of committees was then called for. A. C. Callister gave a verbal report for the Committee on Public Health and Legislation. He asked for coöperation of members of the Salt Lake County Medical Society regarding questions asked them pertaining to experiences with contract work and welfare work, in order that the committee might obtain information which might be of value in its investigation of co-operative medical societies.

F. M. McHugh, reporting for the Medico-Legal Society mentioned several cases in which the committee had aided the members, and stated that as most cases start from inadvertent remarks made in physicians' offices, the committee requested that the physicians use precaution in discussing work done by colleagues.

There was no report of the Library Committee or the Boy Scouts Committee.

C. M. Benedict gave a verbal report of the Program Committee, and asked for any suggestions regarding the future meeting.

J. P. Kerby gave the following report of the Special Committee on fee schedule:

"The Special Committee, appointed to consider the revision of the present fee schedule of this society, has no report to submit in the matter of fee revision. It is considering the matter in connection with the appropriate committee of the state society.

"It has considered the letter of the executive secretary of the Castle Gate Disaster Fund, and desires to recommend as follows: For work done by members of this society, the fee schedule of the Industrial Commission be followed in the case of calls and minor operations; for major cases, a reasonable discount be given; that the secretary of this fund be advised that a letter should be written to the secretary of the society, of which the physician doing the work is a member, for the ruling of that particular society in regard to its members; that this society should not attempt to set fees for other county societies."

A report of the Necrology Committee, J. U. Giesy, chairman, was read, giving a short obituary of Harry R. Welch. The following resolution was passed by the society:

Whereas, It transpires that a Higher Wisdom than ours has seen fit to recall our comrade and coworker, Dr. Harry R. Welch, from that field of activity in which he has so long been an honored member; and

Whereas, We, his fellow members in the Salt Lake County Medical Society, mark his passing with a deep and lasting regret; therefore, be it

Resolved, That we take this formal means of expressing our sincere sorrow in his loss; that a copy

of this resolution be spread upon the minutes of the society, and a copy sent to the widow and family of the deceased.

Under "New Business" R. J. Alexander spoke briefly of some of the problems of the Salt Lake General Hospital, and asked the members of this society to coöperate in every possible way with the hospital administration. This talk was discussed by A. C. Callister, William F. Beer, Spencer Wright, William T. Ward, Clark Young, and C. M. Benedict. William T. Ward moved that return postcards be sent to each member of the society in order to obtain information whether or not such a member would be interested in doing work at the Salt Lake General Hospital. Motion seconded and carried.

Meeting adjourned at 9:45 p. m., after which an informal smoker was held.

BARNET E. BONAR, *Secretary*.

UTAH NEWS

A regular meeting of the Central Utah Medical Society was held May 7 at Richfield.

Dr. R. T. Richards of the Salt Lake Clinic gave a very interesting paper on the "Goiter Problem in the Intermountain Region."

The society also discussed the advisability of placing maternity work on a strictly cash basis. A vote was called on the matter and carried by a large majority. A committee was appointed to make an announcement in the local papers with reference to the adoption of this measure.

* * *

The final meeting for the spring season of the Holy Cross Hospital Clinical Association was held the evening of May 20 at the Holy Cross Hospital.

Dr. E. F. Root presented a paper on "Cyst of the Spleen."

Dr. M. M. Nielson followed with a paper on "Arthritis of the Hip."

A demonstration of pathological specimens from the hospital laboratory, covering work of the past few weeks, closed the program.

Dr. T. A. Flood showed these specimens and talked upon the pathology of each.

Meetings will be suspended until fall, when they will be resumed.

* * *

Four Salt Lake Medical Reserve Officers Ordered to Duty.—Four Salt Lake Medical Reserve officers have been ordered to active duty, effective July 14, at the Presidio, San Francisco, where they will report to the commanding officer at the Letterman General Hospital. The following men will report: Colonel Willard Christopherson, Lieutenant-Colonel Chauncey M. Benedict, Major James G. Van Scoyoc, and Second Lieutenant Harold W. Cole.

Lieutenant-Colonel Copley Enos, executive officer of the Fifth Reserve District of the Third Reserve Area, just left for the Duchesne country and southern Utah to contact reserve officers. Captain T. R. Kerschner, artillery instructor, has left for Boise to instruct the Idaho National Guard, which is in training.

* * *

Harry R. Welch, 1878-1929

Dr. Harry R. Welch, a well-known physician, age fifty-one, of 123 U Street, died at his home Monday, May 27, of complications resulting from mastoid trouble. He was born in Nelsonville, Ohio, in 1878, graduated in medicine in 1905, and practiced his profession in the vicinity of Nelsonville prior to coming to Salt Lake in 1912. Since that time he had lived in this city, and had recently maintained offices in the Deseret Bank Building.

He was taken sick in February, and became seriously ill Saturday. He is survived by his widow and two children, Charles and Dorothy Welch, all of Salt Lake.

MISCELLANY

Items for the News column must be furnished by the twentieth of the preceding month. Under this department are grouped: Comment on Current and Recent Articles in the Journal; News; Medical Economics; Correspondence; Department of Public Health; California Board of Medical Examiners; and Twenty-Five Years Ago. For Book Reviews, see index on the front cover, under Miscellany.

NEWS

University of California Medical School.—Appointments, promotions, resignations, effective July 1, 1929:

Appointments—Joseph L. McCool, associate clinical professor of ophthalmology.

E. Ogden, instructor in physiology.

P. L. Kirk, instructor in biochemistry (formerly research associate).

Isabel H. Perry, instructor in pathology.

A. M. Moody, instructor in pathology.

W. A. Reilly, instructor in pediatrics.

D. G. Morton, instructor in obstetrics and gynecology.

S. R. Mettier, assistant professor of medicine and pathology (absent on leave 1929/30).

Werner Schmidt, assistant professor of biochemistry.

Minola Stallings, instructor in pediatrics.

Promotions—Z. E. Bolin, from instructor in pathology to assistant professor of pathology.

T. L. Althausen, from instructor in medicine to assistant professor of medicine.

R. L. McCalla, from instructor in medicine to assistant clinical professor of medicine.

C. L. Hoag, from instructor in surgery to assistant clinical professor of surgery.

A. R. Kilgore, from instructor in surgery to assistant clinical professor of surgery.

William B. Faulkner, from instructor in surgery to assistant clinical professor of surgery.

L. P. Player, from instructor in urology to assistant clinical professor of urology.

S. Olsen, from instructor in urology to assistant clinical professor of urology.

H. E. Ruggles, from associate clinical professor of roentgenology to clinical professor of roentgenology.

L. Bryan, from assistant clinical professor of roentgenology to associate clinical professor of roentgenology.

R. S. Stone, from instructor in roentgenology to assistant professor of roentgenology.

E. Wolff, from instructor in pediatrics to assistant clinical professor of pediatrics.

Alice Maxwell, from associate clinical professor of obstetrics and gynecology to clinical professor of obstetrics and gynecology.

Dorothy W. Atkinson, from instructor in medicine to assistant clinical professor of medicine.

Florence M. Holsclaw, from associate clinical professor of pediatrics to clinical professor of pediatrics.

Howard C. Naffziger, from clinical professor of surgery to professor of surgery.

J. W. Shiels, from lecturer in medicine to associate clinical professor of medicine.

H. E. Miller, from associate clinical professor of dermatology to clinical professor of dermatology.

M. I. Rose, from instructor in physiology to assistant professor of physiology.

A. Weeks, from associate clinical professor of surgery to clinical professor of surgery.

C. F. Gelston, from instructor in pediatrics to assistant clinical professor of pediatrics.

E. B. Shaw, from instructor in pediatrics to assistant clinical professor of pediatrics.

J. F. Rinehart, from assistant in pathology to instructor in pathology.

F. C. Linde, from assistant in orthopedic surgery to instructor in orthopedic surgery.

J. W. Crawford, from assistant in ophthalmology to instructor in ophthalmology.

C. M. Johnson, from assistant in urology to instructor in urology.

Naffziger Takes Surgery Post in Medical School.—Dr. Howard C. Naffziger, one of the outstanding brain surgeons of the United States, has accepted the position of professor of surgery in the University of California Medical School, according to announcement by Dean Langley Porter. Doctor Naffziger's appointment becomes effective July 1.

From 1919 to 1924 he was connected with the University of California as assistant clinical professor of surgery. He was neurological surgeon at the Medical School in 1924 and served in a similar capacity at St. Mary's Hospital, Mary's Help Hospital, the Marine and Public Health Service and the United States Veterans' Bureau, and as consulting neurological surgeon in the Children's Hospital and the San Francisco Hospital.

Doctor Naffziger is a member of the San Francisco County, California State and American Medical Societies, the San Francisco Neurological Society, the San Francisco Academy of Medicine, the Central Neuropsychiatric Society, Society of Neurological Surgeons, the American Neurological Society, American Society for the Advancement of Science, the Pacific Coast Surgical Society, and the Johns Hopkins Surgical Society; he is a Fellow of the American College of Surgeons.

The contributions of Doctor Naffziger to medical and surgical publications have been numerous and important. Most of them have to do with neurological surgery.

Noted Physician Joins University of California Staff. Announcement has just been made by Dean Langley Porter of the University of California Medical School that Dr. Joseph L. McCool, one of America's leading eye specialists has accepted an appointment to the Medical School faculty as associate clinical professor of ophthalmology, starting July 1.

Doctor McCool was born April 25, 1879. He was graduated from the University of Pennsylvania Medical School in 1900. After graduation he served as resident physician at Howard Hospital, and the General Hospital, Philadelphia; assistant surgeon at the Volunteer Soldiers' Home Hospital, Hampton, Virginia; deputy quarantine physician for the State of Pennsylvania, under two governors; and practiced ophthalmology in Philadelphia and in Portland, Oregon, for twenty-two years, 1907 to 1929.

Among other hospitals with which he has been affiliated, and institutions at which he has taught, are: the Temple Medical School, Samaritan and Garretson hospitals, University of Pennsylvania Postgraduate School, Philadelphia General Hospital, all in Philadelphia; and the Doernbecher Hospital, the Portland Sanatorium, the Eye, Ear, Nose and Throat Hospital, and the University of Oregon medical department, in Oregon.

He holds a certificate in ophthalmology from the American Ophthalmic Examining Board, and is a member of the American Ophthalmological Society, the American Academy of Ophthalmology and Otolaryngology, American Medical Association, American College of Physicians and Surgeons, Pacific Coast Oto-ophthalmological Society, the Oregon State Medi-

cal Society, the Portland City and County Medical Society, and the Oregon Academy of Ophthalmology and Otolaryngology.

He was president of the Pacific Coast Oto-ophthalmological Society (1915-16), president of the Oregon Academy (1929), member of the Council of the American Academy of Ophthalmology and Otolaryngology for one year, associate on the Ophthalmic Year Book for two years, and an aide on the American Board for Ophthalmic Examinations for three years. In addition he is author of some twenty publications dealing with his field of medicine.

Southern Pacific General Hospital Meeting.—The regular staff meeting of the Southern Pacific General Hospital was held on Wednesday, June 5, at 8:30 a. m. The program consisted of a discussion of the fatalities for the month of May, held in a thirty-minute session. It was followed by the regular weekly medical consultation. During the months of July and August morning staff meetings will be held.

The Samuel D. Gross Prize of \$1500 for essays on surgical pathology or surgical practice will be open for competition until January 1, 1930.

The conditions annexed by the testator are that the prize "shall be awarded every five years to the writer of the best original essay, not exceeding one hundred and fifty printed pages, octavo, in length, illustrative of some subject in surgical pathology or surgical practice founded upon original investigations, the candidates for the prize to be American citizens."

It is expressly stipulated that the competitor who receives the prize shall publish his essay in book form, and that he shall deposit one copy of the work in the Samuel D. Gross Library of the Philadelphia Academy of Surgery, and that on the title page it shall be stated that to the essay was awarded the Samuel D. Gross Prize of the Philadelphia Academy of Surgery.

The essays, which must be written by a single author in the English language, should be sent to the "Trustees of the Samuel D. Gross Prize of the Philadelphia Academy of Surgery, care of the College of Physicians, 19 South Twenty-second Street, Philadelphia," on or before January 1, 1930.

Each essay must be typewritten, distinguished by a motto, and accompanied by a sealed envelope bearing the same motto, containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay.

The committee will return the unsuccessful essays if reclaimed by their respective writers, or their agents, within one year.

The committee reserves the right to make no award if the essays submitted are not considered worthy of the prize.

WILLIAM J. TAYLOR, M. D.

JOHN H. JOPSON, M. D.

EDWARD B. HODGE, M. D.

Trustees.

Philadelphia, May 20, 1929.

Summer Course for the Study of Tuberculosis offered by California Tuberculosis Association, under the direction of Allen K. Krause, M. D., Johns Hopkins Medical School, July 15 to 26, inclusive.

Address all communications to California Tuberculosis Association, Griffith McKenzie Building, Fresno, California.

Monday, July 15, at White Memorial Hospital, Los Angeles:

- 9 a. m.—Lecture, The Tubercle Bacillus, Allen K. Krause, M. D.
- 10 a. m. to 1 p. m.—Laboratory, Culture and Isolation Methods, Staining of Specimens, Newton Evans, M. D.
- 2 p. m.—Lecture, The Basis of Physical Diagnosis, Charles C. Browning, M. D.
- 3 p. m.—X-Ray Interpretation, Ray A. Carter, M. D.
- 4 p. m. to 5:30 p. m.—Lecture, Technic of Chest Examination, F. M. Pottenger, M. D.

Tuesday, July 16, at White Memorial Hospital, Los Angeles:

- 9 a. m.—Lecture, Elementary Pathology, Allen K. Krause, M. D.
- 10 a. m. to 1 p. m.—Laboratory, Inoculation of Animals. Experimental Tuberculosis. Gross Human Pathology. Microscopic Pathology.
- 2 p. m.—Discussion, History taking, Carl R. Howson, M. D.
- 3 p. m.—X-Ray Interpretation, Ray A. Carter, M. D.
- 4 p. m. to 5:30 p. m.—Lecture, Tuberculous Laryngitis, Bertram C. Davies, M. D.

Wednesday, July 17, Los Angeles County Hospital:

- 9 a. m.—Clinical Instruction.
- 2 p. m.—Clinical Instruction.
- 4 p. m. to 5:30 p. m.—Lecture, Infection, Allen K. Krause, M. D. (White Memorial Hospital).

Thursday, July 18, Los Angeles County Hospital:

- 9 a. m.—Clinical Instruction.
- 2 p. m.—Clinical Demonstration, Tuberculosis in Children, William M. Happ, M. D. (Children's Hospital).
- 4 p. m. to 5:30 p. m.—Lecture, General Pathology, Allen K. Krause, M. D. (White Memorial Hospital).
- 8:15 p. m.—Lecture, Epidemiology, Allen K. Krause, M. D. (White Memorial Hospital).

Friday, July 19:

- 9 a. m.—Tuberculosis Organizations. Sanatorium Visits—Olive View Sanatorium, W. H. Bucher, M. D., Superintendent; Elliott P. Smart, M. D., Chief, Medical Service; Charles D. Lockwood, M. D., Chief, Visiting Surgical Staff.

Saturday, July 20:

- Elective—Visits to institutions of interest.

Monday, July 22:

- 9 a. m.—Lecture, Hypersensitiveness, Allen K. Krause, M. D. (White Memorial Hospital).
- 11 a. m. to 1 p. m.—Laboratory, Tuberculin Reactions, Animal Tests for Tuberculosis, Newton Evans, M. D.
- 2 p. m.—Clinical Instruction (Los Angeles County Hospital).
- 4 p. m. to 5:30 p. m.—Lecture, Tuberculosis of the Skin, Anstruther Davidson, M. D. (White Memorial Hospital).

Tuesday, July 23:

- 9 a. m.—Lecture, Immunity, Allen K. Krause, M. D. (White Memorial Hospital).
- 11 a. m. to 1 p. m.—Laboratory, Tuberculin Reactions, Pathological Conditions and Tuberculins, Newton Evans, M. D.
- 2 p. m.—Clinical Instruction at Los Angeles County Hospital.
- 4 p. m. to 5:30 p. m.—Lecture, The Heart in Tuberculosis, Donald J. Frick, M. D. (White Memorial Hospital).

Wednesday, July 24:

- 9 a. m.—Clinical Lecture, Urological Tuberculosis, Robert V. Day, M. D.
- 10 a. m.—Clinical Instruction (Tuberculous Laryngitis, Section 1, 2, 3), (Los Angeles County Hospital).
- 2 p. m.—Clinical Instruction (Los Angeles County Hospital).
- 4 p. m. to 5:30 p. m.—Lecture, Nonpathogenic Acid-fast Bacilli, Allen K. Krause, M. D. (White Memorial Hospital).

Thursday, July 25:

- 9 a. m.—Clinical Demonstration, Orthopedic Tuberculosis, John C. Wilson, M. D. (Children's Hospital).
- 10 a. m.—Clinical Instruction (Los Angeles County Hospital).
- 11 a. m. to 1 p. m.—(Tuberculous Laryngitis, Section 4, 5, 6).
- 2 p. m.—Clinical Instruction (Los Angeles County Hospital).
- 4 p. m. to 5:30 p. m.—Lecture, History of Tuberculosis, Allen K. Krause, M. D. (White Memorial Hospital).
- 5:30 p. m.—Dinner and Smoker, Question Box, Allen K. Krause (University Club).

Friday, July 26:

9 a. m.—Sanatorium visits—Pottenger Sanatorium, F. M. Pottenger, M. D., and staff.

2 p. m.—Barlow Sanatorium, Munford Smith, M. D., and staff. Sanatorium Technique—R. L. Cunningham, M. D.

Examination for Entrance Into Regular Corps of United States Public Health Service.—Examination of candidates for commission as assistant surgeon in the Regular Corps of the United States Public Health Service will be held at the following-named places on the dates specified:

At Washington, D. C., September 9, 1929.

At Chicago, Ill., September 9, 1929.

At New Orleans, La., September 9, 1929.

At San Francisco, Cal., September 9, 1929.

Candidates must be twenty-three years and not over thirty-two years of age. They must have been graduated in medicine at a reputable medical college, and have had one year's hospital experience or two years' professional practice. They must satisfactorily pass oral, written, and clinical tests before a board of medical officers, and undergo a thorough physical examination.

Successful candidates will be recommended for appointment by the President, with the advice and consent of the Senate.

Request for information or permission to take this examination should be addressed to the Surgeon-General, United States Public Health Service, Washington, D. C.

Sedgwick Medal Award.—The American Public Health Association announces that the first award of the Sedgwick Memorial Medal will be considered in 1929. This award was established in honor of the late Professor William Thompson Sedgwick, a former president of the American Public Health Association. The fund which provides the medal was raised by popular subscription from Professor Sedgwick's former students and friends. It is to be awarded for distinguished service in public health.

Except for the fact that it is limited to the recognition of service in the field of public health, there is no restriction as to the special line of service that will be considered. Administration, research, education, technical service and all other specialties in the public health profession will receive equal consideration. No limitations as to age, sex, or residence have been fixed, though only candidates who are nationals of the countries in the American Public Health Association—at present, United States, Canada, Cuba, and Mexico are eligible.

The committee of the association which has this matter in charge is composed of: Mr. Homes N. Calver, secretary; Dr. Charles B. Chapin, Dr. Lee K. Frankel, Professor E. O. Jordan, Dr. George W. McCoy, Dr. M. P. Ravenel, Dr. M. J. Rosenau (chairman), Mr. Robert Spurr Weston.

The committee will not consider direct applications from candidates, but asks for nominations, giving the information suggested in the accompanying form. Nominations should be addressed to the secretary, Homer N. Calver, 370 Seventh Avenue, New York, N. Y., and should include the following:

Name of the proposed candidate.

Residence address.

Business address.

Age.

Country of which the candidate is a citizen.

Degrees held, date received and institutions from which received.

Principal public health positions held.

A brief description of the distinguished service performed because of which the candidate is recommended for consideration. This should include information as to when and where the work was done, the name of the organization or institution, if any, under whose auspices or in whose service the candidate worked, an estimation of the direct or indirect effect

of the work measured in terms of life-saving or benefit to humanity. Descriptive articles, reports or similar data published or unpublished will be helpful to the committee. To be considered, the service must have been actually performed and not be merely a plan or suggestion.

Anonymous recommendations will not be considered, and the committee reserves the right to refrain from making an award this year.

Public Health Honor.—President Herbert Hoover, Surgeon-General H. S. Cumming of the United States Public Health Service, and Dr. Frederick F. Russell of the Rockefeller Foundation have been elected honorary members of Delta Omega, the honorary public health society. The gold key and the certificate of the society were presented to President Hoover at the White House on June 18, 1929, by Lieutenant-Colonel E. G. Huber and Dr. James A. Tobey, national president and secretary, respectively. Surgeon-General Cumming also participated in this ceremony. The only other honorary member of Delta Omega is Dr. Charles V. Chapin of Providence, Rhode Island, former president of the American Public Health Association. One of the six chapters of the society is at the University of California, the others being at Johns Hopkins, Harvard, Yale, Massachusetts Institute of Technology, and University of Michigan.

CORRESPONDENCE

Rome, June 2, 1929.

To the Editors:

I am enclosing a short paper of some observations I have made of some of the interesting problems of the tuberculosis situation in Italy which I thought would be acceptable to the journal and interesting to its readers.

It is indeed interesting to see what can be accomplished in a country where practically all the thinking people believe in and support the government, and the others dare not disobey.

* * *

TUBERCULOSIS SITUATION IN ITALY

As one studies the tuberculosis problem in the various countries of the world, one is impressed by the fact that the fundamental principles on which the prophylactic campaign must be carried out are essentially the same. Usually a handful of devoted workers labor for years without evidence of effective results to give encouragement to their efforts, until finally the result of their labors is expressed in a national awakening and the transposition of apparently hopeless endeavor into effective, regulated activity.

During a few months' residence in Rome I have quite naturally become interested in some phases of a very interesting campaign against tuberculosis; interesting, first, because it is still in the making. Italy is one of the last of the great nations that has officially recognized a national, governmental responsibility to her people for the ravages of tuberculosis and the great economic loss they suffer. A government as enlightened as the present Italian Government can do much in such a campaign to avoid the errors and pitfalls encountered by her older sisters—older in experience in the fight against the white scourge. It is intensely interesting because in Italy the terms "statute" and "enforcement" are practically identical. The observance of a law in the breach is unknown in the present-day Italy, and thus public health statutes are, and will be, rigidly enforced with an efficiency which would be tyrannical, were it not for the fact that these laws are promulgated and effectively exercised by a beneficent, enlightened government at the head of which resolutely stands a great leader of men, who, only a few years ago, did more to save Italy and all of Europe from chaos than most Americans realize.

Italy, before the war, and as late as 1924, had not developed her antituberculosis campaign to any great extent. She had her groups of workers, but with an

apathetic government and indifferent population generally, the enthusiasm of these workers was not aided by governmental support and financial assistance.

While a few cities in northern Italy, like Milan, were doing some effective work through organization, there were no antituberculosis organizations of any kind throughout central and southern Italy.

Of course the moderate mortality from tuberculosis in Italy did not present the danger in as acute and impelling a form as in various other countries. In 1925 the mortality from all forms of the disease in Italy was 60,000; this in a total population of 40,000,000.

Such was the indifference of the government, that in the early postwar years there were in Italy less than eight thousand beds for tuberculosis, public and private, and no governmental support of antituberculosis activity.

It has been indeed fortunate for Italy that the advent of the Fascisti Government has produced a vigorous awakening of the national conscience in this as in other fields of national life. It would require too much space to go into detail concerning the development of the present Italian Government, or the personality of the man who conceived it and brought it to its present condition of efficiency. Greatest among the present leaders of men in Europe, Mr. Mussolini was not only able to visualize the need of public health measures, but was wise enough to call competent scientific men to his assistance, and sufficiently determined and powerful to respond to the necessity of tuberculosis relief with legal enactment.

In this way the institution of provincial antituberculosis associations has been made compulsory by law, and, fully as important, the functioning and coöperation of these associations was regulated. Provision was also made to supply the various provinces with the organization which represents the pivotal point of the campaign, namely, the tuberculosis dispensary. Such institutions, already successful in large central cities like Rome and Milan, have been established in recent years in all the provinces where they are needed. At the present time Italy has more than 200 dispensaries, and it is reasonable to assume that in the near future this number will be considerably increased.

Probably the most immediately urgent problem in the prevention of tuberculosis which faced the Fascisti Government was the housing and hospital care of tuberculous patients, amounting to approximately four hundred thousand.

The serious deficiency in the number of sanatoria and beds for tuberculous patients, and the large outlay which would be necessary to meet the expense of adequate equipment, prompted Mr. Mussolini, with the help of his expert advisers, to enact a law last October, providing for compulsory insurance against tuberculosis for all employees. This affects about 8,500,000 citizens, who will be entitled to treatment in sanatoria should they suffer from tuberculosis and be no longer able to work. Half of the insurance contribution is paid by the employer, and the other half by the employee, varying from 4 to 8 lire (20 to 40 cents) monthly. This also provides an allowance for wife and children during the illness of the head of the family.

This law, which is already in force, has enabled the National Bank for Social Insurance (to which has been entrusted the insurance alluded to above) to devote considerable sums to the building of sanatoria, and it is probable that within ten years Italy will have completed its work of providing beds for tuberculous patients. At the present time the number of beds in sanatoria and hospital sanatoria is approximately twenty thousand.

Several private and semipublic sanatoria are also under consideration or in course of construction. In southern Italy, alone, six are now being built.

Nothing has here been said with reference to the most important problem of tuberculosis, prophylaxis in relation to childhood. Much constructive work is being done in this field, but the subject is too com-

prehensive to be dealt with here. I shall endeavor to discuss it in a subsequent paper.

Finally, by the wish of Mr. Mussolini, and through voluntary contributions of the Confederation of Fascisti Tradesmen, an imposing "University Institute for Tuberculosis" is being built. It will be under the direction of Professor Morelli, a former pupil of Forlanini, and who will carry on the work and methods of that great teacher. The institute will be called the Benito Mussolini Institute, a fitting monument to one who, in addition to his other great constructive achievements, has done so much and in so short a time to raise Italy to a place among the progressive nations in the field of tuberculosis prophylaxis. In a city peculiarly rich in enduring monuments to great men of the past, may this fitting memorial to Italy's great modern statesman stand amidst the glory of achievement, a permanent tribute to a great humanitarian principle, when these magnificent ruins of tufa, travertine, and marble, which commemorate the men that made the great Roman Empire, have disintegrated and been forgotten.

* * *

Please continue to have the journal sent to my Rome address as heretofore. It is nice to be kept in touch with medical activities at home.

With best wishes to you, believe me,

Sincerely yours,

GEORGE H. EVANS.

TWENTY-FIVE YEARS AGO*

EXCERPTS FROM OUR STATE MEDICAL JOURNAL

Vol. II, No. 7, July 1904

From some editorial notes:

. . . *The A. M. A. Meeting.*—The fifty-fourth annual meeting of the American Medical Association was the most successful in its history, so far as attendance was concerned. Something over 2800 members registered at Atlantic City. . . .

. . . The Association must, sooner or later, recognize that a control which makes its journal the "greatest advertising medium for proprietary preparations" in the United States is not the control that will hold together state associations which do not approve of this policy; there are such, and their number is rapidly increasing. . . .

. . . *Hall of Exhibits.*—A criticism that has been made in previous years can be repeated this year, if one considers the hodgepodge of stuff in the "Hall of Exhibits" at the A. M. A. meeting. It is a disgrace to the Association that it should permit the foisting of nostrums upon physicians at these meetings. . . .

. . . The responsibility rests with the trustees; it is plainly up to them to insist upon decency, or else openly confess that the Association is out for money, clean or dirty, so long as it is money; that money, and not a high professional standing, is what they are after. . . .

. . . *Important Decision.*—An exceedingly important decision has recently been handed down by the Supreme Court of North Carolina. The case at issue was one involving the constitutionality of the Dental Practice Act, and was, in every essential particular, identical with the case, *Ex Parte Gerino*, just decided by the Supreme Court of this state. A summary of the decision is published in the *Journal of A. M. A.*, April 9. The points decided are the power of the legislature to require an examination; the exercise of police power by the state for the protection of the public, as against the conferring of special privileges; the right to require an applicant to comply with every requirement of the law before taking an examination; and the right of the legislature to delegate its appointive power to

* This column aims to mirror the work and aims of colleagues who bore the brunt of state society work some twenty-five years ago. It is hoped that such presentation will be of interest to both old and recent members.

a recognized society or association of professional men who are assumed to be better able to intelligently select the examiners who shall carry out the requirements of the legislature. . . .

From an article on "Supreme Court Sustains the California State Medical Law":

This issue of the state journal prints in full below the decision of the Supreme Court, sustaining in every particular the constitutionality of the Medical Practice Act. The decision should be carefully read by every physician in the state, for it is a clear, exhaustive and scholarly document, completely setting at rest all contention as to the constitutionality of the act. . . .

From an article on "Malarial Nephritis" by George F. Reinhardt, M. D., Berkeley:

Nephritis from malarial poisoning is not uncommon, but is not always recognized as malarial in origin. . . . I present the following cases as examples of malarial nephritis. The diagnosis is fortified by the fact that with quinin, recovery was brought about in each case. . . .

From an article on "The Medico-Legal Responsibilities of the Physician in Cases Where Insanity is Alleged as a Defense" by J. W. Robertson, M. D., Livermore:

. . . In law nothing is good that is not old, and, until precedents have fossilized an idea and encrusted it with hundreds of decisions, it does not become a legal maxim. Medicine and law are incompatible and are types of the extremist radicalism and conservatism. In the past hundred years no science has made greater progress than medicine, while law remains a question of precedents and procedures. . . . At present the only safe course a medical expert can honorably follow is to refuse to go on the witness stand unless, after a full investigation, he becomes convinced, not that he can answer the hypothetical question honestly, but that he can fully enter into the merits of the case, and know that his contentions have a basis of absolute truth. . . .

From an official notice to county secretaries:

There are some of the secretaries of county societies who seem not to understand the relation existing between the several county organizations and the state society.

The state society is simply an organization composed of members of the component societies, and is maintained by a per capita assessment on members of these affiliated county societies. . . .

. . . The state journal is the property of the state society, and consequently is owned jointly by every member of every affiliated county society. This being the case, the secretaries of these county societies, representing their membership, should act as their spokesmen, and send in monthly reports, medical news items of interest to their members, notices of marriages, births and deaths, reports of meetings, changes of location; in fact, should act in the capacity of a sub-editor of the journal. This work may take some time, and may be thought a hardship by some, but the county secretaries are the ones who keep in touch with their members, and are, therefore, in a position to get the news. . . .

From some personals:

. . . Dr. Walter Lindley, editor of the *Southern California Practitioner*, has recently been elected dean of the Medical College of the University of Southern California. This Los Angeles school is now entering its twentieth session. Doctor Lindley was one of the organizers of the school, and is professor of gynecology in that institution. . . .

DEPARTMENT OF PUBLIC HEALTH

By W. M. DICKIE, M. D., Director

Activity Shown in Organization of Mosquito Abatement Districts.—The organization of the largest mosquito abatement district in the state is almost completed. This district will include most of Alameda County. Its organization has been approved by the city councils of all of the municipalities to be included within the district. The cities of Oakland, Berkeley, Alameda, San Leandro, Hayward, and Albany are integral parts of the proposed district. Under the tax levy, as provided under the Mosquito Abatement District Act, about \$50,000 dollars will be available annually for mosquito abatement work in the East Bay district. The petitions for the organization of the district are now being circulated and there is every reason to believe that the organization will be perfected within a short time.

There is a large amount of work to be done in mosquito abatement in the salt marshes along the eastern shores of San Francisco Bay. The winds blow the salt marsh mosquitoes from their breeding places to all of the cities in Alameda County. Their invasion constitutes a distinct menace to the health and comfort of East Bay residents. The *Anopheles* mosquito, which transmits malaria, is not found in this district, but the salt marsh mosquito, which is particularly voracious, abounds there in tremendous numbers.

Another mosquito abatement district is in process of formation in North Sacramento. The city council has approved of the organization of the district, and the petition required by law has been signed. Action now is dependent upon the Sacramento County Board of Supervisors. The proposed district will include the city of North Sacramento, and a large portion of unincorporated territory of Sacramento County.

Definite plans are under way for the organization of districts in Orange County and Venice. There is considerable interest in the formation of districts in Solano County and in San Diego.

One Hundred and Two Children Aided Through Crippled Child Act.—Since the Crippled Child Act went into effect in the fall of 1927, certificates enabling the treatment of 102 children have been issued. Three such certificates were issued in 1927, sixty-eight in 1928, and during the first four months of 1929 thirty-one such certificates have been issued. The appearance of 1274 cases of epidemic poliomyelitis in 1927 led to the making of a comprehensive survey of paralyzes by the State Department of Public Health. A large number of crippled children were left in the wake of this disastrous epidemic. All counties of the state, with the exception of Alameda, San Francisco, Inyo, and Los Angeles City, were covered in the survey. Home visits and calls upon local physicians for the purpose of ascertaining the condition of children who had suffered from epidemic poliomyelitis were made in all of these counties. During 1928 twenty-four counties of the state were visited and cases checked. The following table gives full information concerning the results obtained through the operation of the Crippled Child Act during the nineteen months that it has been in operation:

Number of certificates issued.....	102
Cases dismissed as cured.....	8
Cases no longer hospitalized but still under observation	43
Cases in convalescent homes.....	4
Cases pending	8
Cases which have not been hospitalized.....	8
Cases which died	2
Cases hospitalized	29
Number of surgeons.....	22
Number of hospitals.....	21
Number of counties	34

New Health Officer at San Bernardino.—Dr. W. W. Fenton has been appointed city health officer of San Bernardino to succeed Dr. Ivan Lewis Finkelberg.

Lepers Are Sent to Federal Institution.—Six lepers were sent to the Federal Leprosarium at Carville, Louisiana, on May 15. Four of these patients were from San Francisco, one from Los Angeles, and one from Oakland. Since this government institution was opened in 1922, eighty-eight lepers have been sent there from California. Nearly all cases of this disease that are discovered within the state are in Mexicans and Orientals. All such patients who have not acquired residential status are deported. The Federal Leprosarium was established by an act of Congress in 1917, following a campaign for the building of such an institution begun by the California State Board of Health in 1914. About three hundred patients are cared for in the leprosarium. Patients are transferred from California in May and December of each year. Their removal to Carville relieves our counties of the onerous burdens associated with their care and treatment.

List of Diseases Reportable by Law.—Anthrax, beriberi, botulism, cerebrospinal meningitis (epidemic), chickenpox, Asiatic cholera, coccidioidal granuloma, dengue, diphtheria, dysentery (amebic), dysentery (bacillary), encephalitis (epidemic), erysipelas, flukes, food poisoning, German measles, glanders, gonococcus infection, hookworm, influenza, jaundice (infectious), leprosy, malaria, measles, mumps, ophthalmia neonatorum, paratyphoid fever, pellagra, plague, pneumonia (lobar), poliomyelitis, rabies (animal) rabies (human), Rocky Mountain spotted (or tick) fever, scarlet fever, smallpox, syphilis, tetanus, trachoma, tuberculosis, tularemia, typhoid fever, typhus fever, undulant (Malta) fever, whooping-cough, yellow fever.

Quarantinable diseases—Cerebrospinal meningitis (epidemic), Asiatic cholera, diphtheria, encephalitis (epidemic), leprosy, plague, poliomyelitis, scarlet fever, smallpox, typhoid fever, typhus fever, yellow fever.

Health Hints for Campers.—A spade or shovel is useful to bury camp wastes, to level off the ground where a tent is to be pitched, and to dig trenches. It is necessary, also, in putting out a camp fire.

Help to prevent forest fires.

It pays to be particular about the purity of the drinking water.

In districts where mosquitoes abound, it is important to provide protection against these biting insects. Mosquito netting of fine mesh will prove useful.

A mosquito repellant that has been tried and found useful is made as follows:

Take one and one-half parts of oil of citronella, one part of coal oil, two parts of coconut oil, to which add one per cent of carbolic acid. This may be rubbed on the hands and face or it may be sprinkled lightly on a towel which is suspended near the camper's head.

Campers who are susceptible to poison oak will find the application of a 10 per cent solution of iron chlorid useful in the prevention of poisoning by this irritant. It is also useful in the treatment of the skin irritation.

Communicable Disease Reports for May 1929:

Chickenpox	2367
Diphtheria	204
Encephalitis (epidemic)	4
Measles	491
Meningitis (epidemic)	85
Poliomyelitis	12
Scarlet fever	1729
Smallpox	263
Typhoid fever	41
Whooping-cough	1238

Two cases of coccidioidal granuloma were reported the last week in May.

CALIFORNIA BOARD OF MEDICAL EXAMINERS

By C. B. PINKHAM, M. D.
Secretary of the Board

Nineteen Hundred Twenty-Nine Amendments Affecting the Medical Practice Act of the State of California

The following amendments to the Medical Practice Act were considered by the legislature during the last session:

Senate Bill 106 (Crowley) added a new section to the Medical Practice Act, prohibiting the *use of Board of Medical Examiners badges* except by its attorneys or special agents. The bill was allowed to die in the Assembly committee, inasmuch as another bill then passed accomplished the same purpose.

Senate Bill 213 (Crowley) amends Section 12 of the Medical Practice Act by permitting the board in its discretion to require a *practical, clinical, oral examination of commissioned officers* in the medical corps of the United States Army, Navy, and Public Health Service, whose credentials do not entitle them to a certificate without an examination. A clause also provides for refund of \$40 of the \$50 application fee in case the certificate be not issued. (Chapter 217, Statutes 1929.)

Senate Bill 214 (Crowley) amends Section 9 of the Medical Practice Act by requiring that the applicant's *course of instruction must be "resident,"* and also increases the *chiropody requirements* after July 1, 1930, to three years—this at the request of the State Association of Chiropodists. The amendment requiring an additional year for graduates of medical colleges was stricken from the bill at the first committee hearing, several persons appearing in opposition and no one in support thereof. (Chapter 309, Statutes 1929.)

Senate Bill 215 (Crowley), companion bill to Senate Bill 214, increases *chiropody requirements* after July 1, 1930, to 2625 hours. (Chapter 310, Statutes 1929.)

Senate Bill 216 (Crowley) amends Section 17 of the Medical Practice Act by adding the words "blemish" and "disfigurement" in *defining what constitutes a violation and prohibits the use of the words* "chiropodist," "orthopedist," "orthopedic specialist," "foot specialist," "osteologist," or "Doctor of Osteology" without holding a certificate issued under the Medical Practice Act, exemption being made for those engaged in the manufacture, recommendation, or sale of either corrective shoes or appliances for human feet. (Chapter 233, Statutes 1929.)

Senate Bill 217 (Crowley) amends Section 14 of the Medical Practice Act in connection with causes for revocation of license as follows:

Adds subdivision fourth (a) making the record of *conviction of a felony* conclusive evidence;

Adds subdivision fourth (b) making *conviction of or cash compromise of a violation of the Harrison Narcotic Act* conclusive evidence;

Amends subdivision eleventh (a) of the present law by *prohibiting the use of the suffix "M.D."* by the holder of *any* certificate provided for in the Medical Practice Act unless granted after the completion of a full course of study in an approved medical school;

Amends subdivision eleventh (b) by *prohibiting the use of the suffix "D.O."* by the holder of *any* certificate provided for in the Medical Practice Act except one who has been granted the degree Doctor of Osteopathy after the completion of a full course of study in an approved osteopathic school;

Adds subdivision eleventh (c) *prohibiting the use of the suffix "D. S. C.,"* except by one who has been granted that degree after the completion of a full

course of study in an approved school of chiropody. (Chapter 311, Statutes 1929.)

Senate Bill 523 (Crowley) amended Section 13 (reciprocity) of the Medical Practice Act as follows:

1. By rearranging the phrascology.
2. By *permitting the California board to go back of the endorsement* of the board which issued the certificate used as basis of application, this having been found necessary following a court decision in California's attempt to revoke a license issued by the California board on reciprocity, wherein the court held the board had no authority to go behind the endorsement of the sister state board. In other words, under the present law, if a certificate had been issued by a sister state and properly certified, regardless of any disclosures in connection with the irregularity in such issuance, our legal department reports the courts in Los Angeles hold that the California board cannot make any further inquiry.

3. *Prohibits consideration on a reciprocity basis* of any applicant who has failed to pass the written examination in California. Such an applicant must again apply for California's written examination, and will not be permitted to gain a license otherwise.

4. Requires that those *reciprocity applicants licensed by the Board of Osteopathic Examiners "to practice osteopathy" or as "drugless physicians"* must pursue an additional course of instruction in compliance with the provisions of Section 10 of the Medical Practice Act before they are eligible for oral examination for a "physician's and surgeon's" license. (Chapter 812, Statutes 1929.)

Senate Bill 628 (Nielsen) proposed to amend the Medical Practice Act by adding a course of instruction and a new certificate designated as an "osteopathic physician's certificate," and also proposed to strike from the present Medical Practice Act all reference to the drugless practitioner certificate. The bill was tabled at the first committee hearing.

Assembly Bill 688 (Cloudman) adds Section 11 (a) to the Medical Practice Act, permitting the Board of Medical Examiners, in its discretion, with or without oral examination, to accept *diplomats of the National Board of Medical Examiners*. (Chapter 330, Statutes 1929.)

Assembly Bill 809 (Roland) amends Section 15 of the Medical Practice Act by *requiring certificates to be "registered" rather than "recorded"* in the office of the clerk of whatever county the individual may practice, with a further provision that the *registration* shall show "the scope of practice permitted thereunder as prescribed on said certificate so registered."

News Items, Medical Licentiatees

California's usury law, with its "triple threat" penalty, was given its first application in San Francisco courts yesterday. Dr. Clayton E. Wheeler, gland specialist here and in Los Angeles, is the defendant. Lou H. Rose, 470 Beverly Drive, Beverly Hills, asks him to pay \$19,889 damages for collecting from Rose \$6629 alleged usurious interest. The complaint charges that Rose borrowed \$12,500 from Wheeler in March 1927, and on August 4, 1928 paid him considerable in excess of that sum in cancellation of the loan (*San Francisco Examiner*, May 17, 1929). (Previous entry, December 1928, and January and June 1929.)

Dr. Joseph T. Wrenn, San Francisco physician and former Superintendent of the El Dorado County Hospital, was sentenced to serve two terms of from one to ten years in San Quentin Prison yesterday. Sentence was pronounced in Placerville after Doctor Wrenn pleaded guilty to two counts of an indictment charging him with embezzling \$12,000 from his father's estate. Sentences will run consecutively, the court ruled (*San Francisco Examiner*, May 26, 1929).

Dr. C. E. Camp, sixty-two, practicing physician for many years in San Pablo, must serve twenty-five years in San Quentin Prison for high misconduct in his relation with young girls in that community, the Prison Board has determined in fixing his sentence, according to word received here this morning (*Martinez Gazette*, May 15, 1929). (Previous entries, March and September 1928.)

Citations calling licentiatees before the Board of Medical Examiners for legal hearings scheduled at Native Sons Hall, San Francisco, commencing at 10 a. m. Tuesday, July 16, have been issued as follows: Roy L. Buffum, M. D., Long Beach, narcotics; Norman Goodenow, M. D., Pasadena, narcotics; Robert C. Kirkwood, M. D., Missouri, narcotics; Roy S. Lanterman, M. D., Glendale, alleged illegal operation; William McKenery Moore, M. D., Maywood, narcotics; Leonard Pulsifer, M. D., Davis, narcotics; Moses E. Smith, M. D., Plymouth, narcotics; Ormiston Swayze, M. D., Nevada City, narcotics; Fred B. Tapley, M. D., Marysville, alleged illegal operation; Paul S. Traxler, M. D., Glendale, alleged illegal operation; Joseph T. Wrenn, M. D., San Francisco, penitentiary commitment.

"Blood spots found in the bathroom of Dr. Frank P. Westlake's home on West Eleventh Street yesterday were identified by City Chemist Walsh as being of human origin. This point was considered by Captain Bright of Sheriff Traeger's Homicide and Investigation Detail as one of the strongest points in the chain of evidence against Westlake, who is accused of murdering Mrs. Laura B. Sutton, whose dismembered torso was found in the Los Angeles River bottom near Linwood, April 4, last. . . ." Finding no record of Frank P. Westlake in the office of the Board of Medical Examiners or in the 1927 American Medical Association directory, we communicated with the Criminal Identification Bureau, Sacramento, and received the following information: "In reply to your letter of June 10, asking for information relative to Frank P. Westlake, subject is described as: Ch hair, Blue eyes, 5-4½ 135, 41-19, 1/2 U/R II/II 16/16: 12-2-19 Richmond No. 990 as Westlake: G. L. from R. R. cars (with M. H. Bon, No. 987, and C. H. Beyers, No. 989, and S. L. Whittlesey, No. 991, a switch crew for Santa Fe R. R.—alleged to have stolen a lot of goods from freight cars and delivered them to K. Atonich, No. 988, who sold same)."

General News Items

M. Araki on May 27 pleaded guilty to a violation of the Medical Practice Act in Los Angeles and paid a fine of \$100 on a charge of violation of the Medical Practice Act.

Instead of receiving a sentence of from one to ten years for manslaughter, which would have been his fate had he "left well enough alone," Dr. Arthur O. Berg, chiropractor, today appeared before Superior Judge Carlos S. Hardy to receive a life sentence for second degree murder. It will be the second time Doctor Berg has been sentenced to life for the murder of fifteen-year-old Page Walden, university student, through an alleged illegal operation. The chiropractor was originally convicted last year and spent eight months in San Quentin until the Supreme Court granted his appeal. When first returned here for a new trial, Doctor Berg accepted the terms offered by the District Attorney's office and pleaded guilty to manslaughter, which would have carried the lighter penalty. Suddenly, however, he fired his attorney, John Jorgenson, who had won the appeal, and changed his plea, stating that he wished to stand trial again. The second trial, which ended last week, resulted again in conviction for second degree murder (*Santa Monica Outlook*, May 28, 1929). (Previous entries, July and September 1928, and May 1929.)

Judge C. L. Bogue yesterday issued a bench warrant for Melvin Richards, chief state witness in the trial of Dr. J. C. Cowle, head of the Cowle Chiropractic School, who is charged with practicing without a license, when the defense filed a complaint that an attempt was being made to buy state witnesses. Richards failed to appear when the case was called for trial yesterday, although he and J. R. Townsend presented Bert Humason, chief inspector for the Chiropractic Board, with the affidavits which resulted in Cowle's arrest. The defense charged that the missing man told his employer he was going to leave the state and "get things fixed" so he would not have to testify (*Los Angeles Illustrated Daily News*, June 11, 1929).

Branded by prosecutors as members of a widespread ring dealing in fraudulent medical licenses, seven men were indicted by the Cook County (Illinois) Grand Jury today and four of them were under arrest tonight—one in Pittsburgh, Pennsylvania, one in St. Louis, one in Springfield, Illinois, and the other one here (Chicago). Operations of the seven are said to have extended over several states and a period of about three years. Licenses, it is charged, were sold to persons not entitled to them for from \$600 to \$3000. Barron, when arrested, was carrying a suitcase full of fake licenses and a stock of seals, officers asserted. Among the licenses issued, it is charged, were scores to graduates of a medical school in Connecticut, which was closed after an investigation (press dispatch, dated Chicago, June 14, published in the *San Francisco Examiner*, June 15, 1929). It is evident that more states need to pass a diploma mill bill similar to that in force in California, which makes it a felony to traffic in fraudulent documents in an attempt to gain a license either before the medical, osteopathic, or chiropractic board.

William F. Hoque, maker and dispenser of a so-called cancer remedy, was fined \$500 yesterday by Judge J. R. Welch for practicing medicine without a license. . . . Hoque is said to have inherited the formula of the remedy from his father, the late Francis M. Hoque, who died in 1921 (*San Jose Mercury-Herald*, May 18, 1929). (Previous entry, May and June 1929.) Commenting on this case our Special Agent Davidson reports: "It is most enlightening to learn from Hoque's own testimony, under oath, that his cancer salve only attacks the cancerous tissue and does not affect good tissue, and that it is a secret formula handed down through generations of the Hoque family. To our personal knowledge there is hardly a community in the country, and we know in California, that has not some person who has a remedy handed down by their ancestors for the cure of cancer, and the statement of Hoque that his remedy is an escharotic paste which will *only* attack cancerous tissue is so far afield from the truth and our actual knowledge as to the action of drugs as to make the entire transaction real comedy, if it were not for the pathetic results of an ignorant and credulous public being imposed upon by a charlatan of this type."

George D. Johnson, seventy, 222 West Oak Street, was arrested this afternoon on a charge of practicing medicine without a license. According to Captain of Detectives Fredericks, the man was arrested on the same charge several years ago and served a jail sentence (press dispatch dated Stockton, May 29, published in the *San Francisco Examiner*, May 30, 1929). (Previous entries, February and September 1926, January and March 1927.) Commenting on this case our special agent relates that "at the time of Johnson's arrest he had in his pocket two pairs of long, curved uterine forceps, two pairs of straight uterine forceps, two vaginal speculums, two half-tubes of KY Jelly, and one box of assorted sizes 16, 17, and 18 Sea Tangle Tents. . . ." Johnson is alleged to be a drug-gist and is asserted to have no medical training.

According to reports, T. Kushiya pleaded guilty to a violation of the Medical Practice Act in Los Angeles, May 28, 1929, and on May 31 was fined \$50.

The California Assembly has voted to outlaw cash compromises in Federal narcotic cases and to prohibit the sale of veronal without a doctor's prescription. The cash compromise measure will give the Board of Medical Examiners a powerful weapon to help eliminate the unscrupulous physicians who violate the narcotic laws. Judging from the late rumbles down Hollywood way, in which several prominent physicians were implicated as "dope peddlers," the board needs such a weapon. As for prohibiting the sale of veronal, it is about time that some kind of a brake was put upon this traffic.—*San Francisco Wash News Letter*, May 18, 1929.

Dr. Donald McDonald, said to be a graduate of McGill University, Toronto, was arrested today, charged by the American Trust Company with having passed a worthless check for \$350. McDonald, according to Detective Sergeants Tom Hyland and James Hanson, has left a trail of bad checks across the country. His scheme, police declare, was to have a fellow alumnus of McGill endorse his bad paper (*San Francisco News*, May 27, 1929). No one by the name of Donald McDonald appears on the records of the Board of Medical Examiners as licensed to practice in this state.

According to reports, James A. McCarthy pleaded guilty to a violation of the Medical Practice Act in Los Angeles, June 3, 1929, and was sentenced to pay a fine of \$100 and serve ninety days in the city jail. The fine was paid and jail sentence suspended for two years.

Mrs. M. H. Manning, sixty years old, 765 Watkins Street, Hayward, was held in the Alameda County jail last night for investigation following the death yesterday of Mrs. Olive White, twenty-eight, wife of Emanuel White, Jr. of Decoto. Mrs. White, according to the death certificate of Dr. E. A. Ormsby of Centerville, who treated her at Hayward Central Hospital, died following an illegal operation. Doctor Ormsby reported to Coroner Grant D. Miller that when he was called into the case, May 28, Mrs. White made a written statement accusing Mrs. Manning of having performed the operation on May 25. Mrs. Manning denied having performed the operation.—*San Francisco Chronicle*, June 5, 1929.

Arrested by investigators for the State Chiropractic Board, Dr. Gertrude Howe, Los Angeles, and her two assistants, Corinne Kissell and Marjorie Miller, were today under ninety-day sentences in the county jail, following their convictions of vagrancy and conducting a disorderly house. Doctor Howe and her assistants were arrested following a raid on their "chiropractic establishment," 430 South Western Avenue, Los Angeles, which examiners declare was a blind for an immoral house.—*Santa Monica Outlook*, May 24, 1929.

According to report of our Special Agent Davidson, Moses Edwin Smith pleaded guilty in United States District Court at Sacramento, Friday, May 17, 1929, to a violation of the Harrison Narcotic Law and is reported to have been sentenced to fifteen days in the county jail in connection with the charge of sending narcotics through the United States mail to Los Angeles. (Previous entry, June 1929.)

According to reports, Hideo Takahashi on May 28, 1929, was found guilty in the courts of Los Angeles of violation of the Medical Practice Act and on May 31 was fined \$50.

CALIFORNIA AND WESTERN MEDICINE

VOLUME XXXI

AUGUST, 1929

No. 2

ECLAMPTOGENIC TOXEMIA*

ITS MANAGEMENT

By FREDERICK HOWARD FALLS, M. D.
Chicago, Illinois

ECLAMPTOGENIC toxemia, like the poor, is always with us. In spite of an immense amount of research and speculation little progress has been made in arriving at the fundamental factors underlying its origin and development. However, great progress has been made by specialists in the management of the disease, so that the mortality and morbidity have been consistently and appreciably lowered in various parts of the world. However, Litzenberg has pointed out that the mortality rate advanced 5 per cent between 1915 and 1925 in the registered area of the United States. When we attempt to explain these facts several factors seem to be of importance.

INFLUENCE OF BETTER INSTITUTIONAL CARE

The prenatal management of the pregnant woman is today far better in many communities than formerly. Institutions like the Cook County Hospital now have regularly attended prenatal clinics where the great bulk of the obstetrical patients are seen and examined regularly and carefully.

Separate institutions, devoted entirely to obstetrical work and serving as a model in technique for the general hospitals, have developed in the larger population centers.

These institutions have influenced the situation in several ways:

1. By giving increasingly good obstetrical care to the patients.
2. By setting up competition standards which other institutions are forced to meet.
3. By serving as training ground for the development of young specialists, good students, and well-trained nursing personnel.
4. By dignifying the science of obstetrics in the eyes of both the profession and laity so that its problems and dangers are considered seriously.
5. By having the general hospitals recognize the importance of proper accommodations for the obstetrician and his patients, and by giving a service comparable to that which is put at the disposal of the general and other surgeons.

* From the Department of Obstetrics and Gynecology, College of Medicine, University of Illinois, Chicago, Illinois.

* Read before the California Medical Association in General Meeting at the Fifty-Eighth Annual Session, May 6-9, 1929.

In addition to the above factors, more time and effort are being expended in some of the medical schools on the teaching of obstetrics, and more and more of the schools are furnishing their students part time paid instructors for this purpose.

Hospitalization of obstetric patients has become almost the rule in the larger centers, and this obviously permits closer observation during labor and the early puerperium; and permits of more rapid and efficient surgical intervention when this becomes necessary.

DETERRENT FACTORS

In addition to these advantages that the modern woman possesses and which her sister of several decades ago did not possess, there are, however, certain disadvantages which she has to assume that were formerly less prevalent. The average woman of today, I believe, is less rugged physically and probably immunologically, than the woman of thirty or forty years ago. Their lives are more sedentary, and they are less exposed to those ordinary slight wound infections which tend to stimulate general immunity.

There are more surgeons who are technically capable of doing a cesarean section but who have no conception of the fundamental obstetrical principles underlying the indications for operation in a given case. These men are called in consultation on obstetrical cases frequently. They know how to do a cesarean section, but have no ability or experience with other forms of obstetrical operations. Naturally they take the easiest way out. The patients, in most instances, would be far better off under strict medical management. Too often the patient is operated in a general operating room of a general hospital with a personnel actively engaged in the care of acute osteomyelitis, mastoiditis, empyema, and other pus infections. There has developed also an unwarranted "furor operativa" in some parts of the country sponsored by well-trained obstetricians. Such men are able to carry out these operations with a minimum of complications, but such practice leads inevitably to disaster when attempted by younger and less skilled individuals. All of these factors help to govern the mortality and morbidity rate in eclamptogenic toxemia.

ETIOLOGY

With these facts in mind let us consider what we know about the etiology of eclampsia. We can practically disregard the various theories that have been advanced and which attempt to explain

its fundamental mechanism, all of which have been more or less discredited.

Several facts are accepted by all:

1. Eclampsia occurs only in pregnant or recently pregnant females.
2. It is associated with degenerative changes in the parenchymatous organs, chiefly the liver, kidney, heart, and brain; but the lesions are not constant.
3. Hard physical work and a diet rich in protein predispose materially to the appearance and aggravation of the physical signs and symptoms.
4. The disease is rarely seen before the sixth month of pregnancy.
5. As a rule, there is a marked increase in the coagulability of the blood.
6. In most of the nonlethal cases clinical recovery is remarkably rapid and complete.

From the above facts I have endeavored to develop a conception of what is the matter with these women, and to outline a treatment based on this that would seem to fulfill the requirements. There is nothing fundamentally new in this, but the factors involved I feel have not been sufficiently stressed in this connection.

It has been shown by Vaughn and others that the protein molecule is highly toxic when split by enzymes in a certain way and to a certain degree. Thus egg-white, casein, or any apparently harmless protein substance contains a powerful and dangerous radicle if split in a certain way. This toxin may, on the other hand, be made completely innocuous by further splitting into its end products. We believe that the eclamptogenic toxemia woman is intoxicated by the products of protein metabolism. Our conception of the pregnant woman can best be appreciated by examining the diagram which I have prepared.

We believe that the pregnant woman is intoxicated from three main sources:

1. From the fetus and placenta directly and by the metabolic changes brought about in the maternal organism by their presence.
2. From the endogenous protein metabolic waste products.
3. From the exogenous protein metabolic waste products.

As a defense against these split protein toxins, the pregnant woman has:

1. The kidney, which is by far the most important factor in their elimination.
2. The bowels, which by stimulation can be made to assume part of the burden of excretion.
3. Blood-letting, which may play an important rôle under certain conditions.

The level of toxins in the blood at any given time depends on the ratio between intake and output of toxins. It is assumed that this level is constantly higher in the average pregnant woman than in the same woman when not pregnant, which may account for the slight and transient toxic symptoms so frequently seen in normal pregnant women, at or near term.

In considering the etiology of the disease we must further consider the harmful effect on the

mechanism of toxin elimination and neutralization that is probably produced by the serious lesions found in the kidneys and liver, and the general depressant effect which pathologic changes in the brain and in the cardiac system must have on the vital processes. It is apparent that once these deleterious effects are produced a vicious cycle is started. The more the liver and kidney, heart and brain are damaged the more toxin accumulates in the blood, and the more toxemia the greater the damage to these organs.

PLAN OF TREATMENT

Any management, therefore, suggested for the treatment of eclamptogenic toxemia must aim at:

1. The reduction to the minimum of the influx of protein metabolic split products to spare the kidney especially.
2. The elimination as rapidly as possible of the toxic elements circulating in the blood in order to reduce the damage to the brain, heart, and liver.
3. The protection of the patient from injury during unconscious periods.
4. The support of the cardiac and respiratory centers until the peak of the intoxication is passed.

In addition to these factors we must consider the best way to meet the obstetrical problem involved, namely, the delivery of the baby, so that both the mother and baby may have the best chances for life and health, and the mother for future pregnancies.

It is obvious, therefore, that the treatment of eclamptogenic toxemia is a complex, not a simple, problem, and depends for its proper solution on a careful estimation of the various factors, favorable and unfavorable, that present themselves in different patients, and not infrequently in the same patient under various circumstances. The fundamental principle to be stressed is, we believe, that the condition is a protein split product intoxication, and that the reduction or elimination of these products is the rational method of attack or approach in treatment.

TREATMENT GROUPS

To this end we have divided patients, as they present themselves, into six main groups; and while realizing that the grouping does not cover all possibilities, nevertheless feel that it is sufficiently comprehensive to serve our purpose:

1. Normal obstetrical conditions plus mild toxemia.
2. Normal obstetrical conditions plus rapidly advancing toxemia.
3. Normal obstetrical conditions plus fulminating toxemia.
4. Abnormal obstetrical conditions plus eclamptogenic toxemia.
5. Intrapartum eclampsia.
6. Postpartum eclampsia.

MORTALITY PERCENTAGES IN DIFFERENT METHODS

Theoretically, with the proper type of prenatal supervision, eclamptogenic toxemia should be a very mild disease perfectly under our control and rarely complicated by convulsions. If we have the

proper facilities for modern obstetrical practice, death should be practically unknown from this toxemia.

The nearest approach to this standard, as reported by other writers, is the work of Stroganoff, who reports a series of two hundred and thirty personally treated cases in which the mortality was 1.7 per cent, he using his well-known expectant line of treatment. Edler, Lundquist, and others, using the Stroganoff method, report 8.5 to 20.2 per cent maternal mortality. Greenhill reports the results of cases treated by De Lee and his associates at the Chicago Lying-in Hospital, many of whom were treated actively by methods such as forceps, version, and cesarean section with a maternal mortality of 7.7 per cent.

Lazard, McNeile, and Vruwink and their associates have reported very good results in the management, especially of the convulsive stage of the disease, by the use of *magnesium sulphate* intravenously, as recommended and used by H. Einar. They use 20 cubic centimeters of a 10 per cent solution intravenously every two hours for six doses, the intervals between injections being lengthened as the patient improves. Blood pressure readings hourly are used as an index for more injections. These injections are combined with small doses of morphin or chloral and bromid per rectum. If convulsions are not imminent, 2 to 4 cubic centimeters of a 50 per cent solution may be given intramuscularly into the buttocks, two to four times a day. They were able to reduce the mortality in the neglected and desperate cases entering the Los Angeles County Hospital from 35 to 16 per cent. The *modus operandi* of this remedy is, according to Vruwink, not clear. Studies by Stander of Johns Hopkins tend to show that the method is not without some danger, if the magnesium sulphate is given too rapidly or in too concentrated solution.

Liver extract injections have recently been used by Mitler and Martinez of Pittsburgh on the supposition that, because of liver tissue destruction, the liver's normal detoxifying function was diminished, and this could be augmented and replaced by injecting liver extract. This theory we feel to be invalid because, first, there is no proof that the toxins of eclampsia can be neutralized by liver extract, or, second, that a detoxicating substance, if present in the liver cells, can be extracted in active form. Our thought is that quite the reverse might be expected, and that the toxemia might be augmented by the injection of a protein substance into a system flooded with proteolytic ferments. These writers, however, report a mortality of 6.9 per cent in only forty-three cases.

Titus and Givens have felt that the injection of *sugar solution* intravenously has a beneficial effect by supplying the immediate metabolic needs of the patient and by replenishing the depleted glycogen stores in the liver and muscles. We have not noted beneficial results from this management when used by others, and we have not adopted it.

What we wish to emphasize in this connection is the importance of the few fundamental principles that we are all familiar with in connection

with this disease. Also how unnecessary a complicated theory as to its origin or treatment is, in order to get good results in treatment. In a broad sense this is true of practically all diseases. Typhoid, rabies, diphtheria, tuberculosis, and many other diseases could be wiped out of existence if we applied thoroughly the principles we already know for their eradication. We are firmly convinced that eclampsia can and should be added to this category.

In recent years a very decided change has come about in the attitude of most obstetricians toward the *operative management* of serious eclamptogenic toxemias. This has, in great part, been due to the above mentioned results which were obtained by Stroganoff and his school. Series as low as 8.5 per cent mortality in cases collected from several clinics using Stroganoff technique have been reported. A radical attitude in the management of these cases has become heretical in the minds of many. This view is based on the almost universally improving statistics in recent years and the concomitant increase in conservative management. We feel that there is some justification for this view, but believe that there are some other factors, such as better prenatal care, more hospital facilities and, on the whole, better trained obstetrical men throughout the country. These combine to make a radical difference in the way these patients are managed before, during and after delivery. For example, at the Cook County Hospital the mortality in patients diagnosed as having eclamptogenic toxemia has for years been between 25 and 35 per cent. In the last six years, with practically the same management in every other way, a prenatal clinic was added. The mortality has dropped to 12 per cent, and it is my firm belief that, with absolute control of the patients, many of this last group also could be saved. Indeed in my clinic across the street at the Illinois Research Hospital, we have had no deaths in over two hundred and fifty cases.

TREATMENT DETAILS IN DIFFERENT GROUPS

How, then, shall we meet the specific and practical problems that present themselves in connection with this disease. The first point of emphasis is the rigidity of the discipline and importance of attention to detail. The treatment may perhaps be best considered by using the grouping previously outlined.

A. *On the management of patients coming under Group 1 (with normal obstetrical conditions and mild toxemia and gestation not longer than thirty weeks):*

1. Bed rest, in hospital if possible, on milk diet, limited to 1000 cubic centimeters if much edema.
2. Magnesium sulphate one ounce every six hours until watery bowel movement.
3. Urine analysis, twenty-four-hour specimen, and quantitative albumin, phenolsulphonephthalein test.
4. Blood count, red, white and hemoglobin, blood chemistry and systolic and diastolic blood pressure.
5. Eye-ground examination.
6. Daily body weight.

If the symptoms gradually improve we add:

7. Fruits, vegetables, cereals, butter and bread, but prohibit tea, coffee, alcohol, meat, eggs, and fish.

Improvement continuing:

8. Sitting up in room and walking around.

TABLE 1.—*Résumé of Cases of Eclampsyogenic Toxemia.*

	Preëclamptic	Nephritic
Number of cases.....	207	46
Convulsions	13—5.2%	3—6%
I. Age. Oldest	45	44
Youngest	14	20
Average	25	31.9
Optimum	15-20	35-40
II. Parity one	108	6
Two	22	4
Three	20	5
Over three	31	28
III. Pos. Wassermann	10	1
IV. General Symptoms.		
Headache	102	32
Edema	118	31
Eye	42	24
Epigastric pain	59	21
Vomiting	72	24
Convulsions	13	3—6%
V. Blood Pressure.		
Highest	235	278
Lowest	104	128
Average	163	182
VI. Urinalysis.		
Albumin	118	47
Sugar	9	4
Red blood cells.....	44	13
Casts. Hyaline	60	27
Granular	65	30
VII. Phenolsulphonephthalein.		
Reported cases	71	35
Lowest	5%	8.1%
Highest	65%	65%
Average	32%	30%
Optimum	30-35%	25-30%
VIII. Eye grounds.		
Reported cases	16	11
Normal	10	6
Retinitis bilateral	4	3
Retinitis unilateral	1	1
Sclerosis		1
Enlarged veins	1	
IX. Blood loss.		
Greatest	2000cc.	700cc.
Least	10	50
Average	250	211
Optimum	150	100
X. Treatment.		
Venesection	14	7
Induction of labor.....	72	22
Milk diet	162	38
Bed rest	151	36
Mg SO ₄	106	40
Morphine	73	14
Saline	4	2
XI. Induction of labor.		
Bag	41	18
Quinin, castor oil.....	40	3
Rupture of membranes	5	1
XII. Type of delivery.		
Spontaneous	158	33
Forceps	19	1
Cesarean	9	7
Breech	5	
Version	6	5
Craniotomy	2	
XIII. Results.		
Maternal deaths		
Fetal deaths	26-12%	22-47%
Deformities	3	
Macerated	6	3
Under 2000	12	10
Viable babies	5-2.4%	9-19.5%

If at or near term, quinin and castor oil induction is tried, failing a slight increase in diet and exercise under close supervision.

If symptoms get worse under this regimen the management becomes the same as under Group 2.

B. *On the management of patients in Group 2 (rapidly advancing toxemia with normal obstetrical conditions):*

1. Quinin and castor oil, Watson method; failing.

2. Voorhees bag induction.

3. Termination of second stage by forceps or version and extraction; if complications ensue or are threatening.

4. Encourage postpartum hemorrhage up to 500 cubic centimeters; no pituitrin or ergot in third stage.

5. Morphin grain one-fourth hypodermatically as soon as the baby is born.

6. Diet of milk until blood pressure falls to 140 to 150 systolic, and urine begins to clear.

7. Magnesium sulphate intramuscularly or intravenously, depending on the severity of the symptoms, speed of appearance and progress.

C. *On the management of patients in Group 3 (fulminating toxic symptoms, normal obstetrical conditions):*

(a) *Ideal obstetrical surroundings:*

1. If not in labor, cesarean section; local or ethylene anesthesia especially indicated if the patient is a primipara.

2. If in first stage, cesarean section unless dilatation can be easily completed, when forceps or version may be substituted.

3. If in second stage, forceps or version, adding episiotomy; if a para one, morphin grain one-fourth after delivery of baby, and one-sixth every six hours afterward if necessary.

4. Five hundred to seven hundred cubic centimeters of blood are withdrawn from the cubital vein. The vein is best opened for this purpose. If operation is to be performed, bleeding is postponed until after the operative blood loss is known.

5. Magnesium sulphate 20 cubic centimeters of a 10 per cent solution given slowly intravenously.

6. If a multipara and markedly premature baby twenty-eight to thirty-four weeks, vaginal cesarean section may well be done.

(b) *If conditions are not ideal, due to poor hospital surroundings, inadequate help, infected patient, or incompetent operator, the Stroganoff method is advised, comprising:*

1. Morphin sulphate grain one-fourth hypodermatically as soon as patient is seen.

2. One hour later 20 to 40 grains chloral hydrate per rectum.

3. Two hours later morphin sulphate one-fourth grain hypodermatically.

4. Four hours later 30 grains chloral hydrate per rectum.

5. Six hours later 15 to 30 grains of chloral hydrate per rectum.

6. Seven hours later 20 grains of chloral hydrate per rectum.

The chloral is injected slowly in four or five ounces of warm water. The patient must be in a dark quiet room, and a light chloroform or ether anesthesia is given to prevent convulsions. Intravenous injections of magnesium sulphate may be used also as above. As soon as labor has advanced to second stage with descent, a forceps extraction may be done if the head does not advance. Unquestionably for the general man with inadequate facilities the Stroganoff method will give the best results.

D. *On the management of patients in Group 4 (abnormal obstetrical conditions plus eclamptogenic toxemia):*

Some of the more important conditions are:

1. Contracted pelvis of moderate or extreme degree.

2. Heart lesions with decompensation or recently established compensation.

3. Pulmonary disease, severe tuberculosis, pneumothorax, pulmonary edema.

4. Uterine fibroids, especially of the large obstructive type, and if patient is an elderly primipara.

5. Acute infectious diseases such as erysipelas, measles, and scarlet fever.

Each case must be individualized, and in general we may say that the earliest termination of pregnancy compatible with fetal safety, and by the most conservative method is the procedure of choice. With contracted pelvis and disproportion between the size of the baby and the pelvis, we lean toward cesarean section to avoid a long-drawn-out labor, with convulsions present, before its termination. Heart and lung lesions are best treated by cesarean section under local anesthesia for the same reason. If uterine fibroids offer insuperable obstruction, Porro cesarean is probably the best procedure, and if the toxemia is mild and the fibroids do not interfere with decent induction of labor, may solve the problem best. If acute infectious disease is present, avoid delivery if the toxemia is not of the fulminating type; and if it is fulminating do a Porro cesarean section, regardless. The indication for cesarean section in this group may be a double or a triple one. The reason we lean toward the radical side is the uncertainty of the ordinary forces of labor under the abnormal conditions present.

E. *On the management of patients in Group 5 (intrapartum eclampsia):*

Conservative measure may be tried, or:

1. In primipara, in the first stage of labor, cesarean section should be done unless the first stage can be easily completed, when forceps or version may be substituted. In multipara, dilatation may usually be accomplished by a bag, or manually.

2. In the second stage of labor, forceps or version, adding episiotomy if the patient is a primipara. Morphin grain one-fourth is given after delivery of baby, and one-sixth grain six hours afterward if necessary.

3. Late delivery room set up to avoid contamination.

4. Watch carefully by rectal examination to avoid precipitate delivery.

5. Prepare for asphyxiated baby, tracheal catheter and oxygen.

6. Limit examinations and operations to avoid infections.

7. Careful repair of wounds.

F. *On the management of patients in Group 6 (postpartum eclampsia):*

(a) *All cases of preëclamptic toxemia found before or during labor:*

1. Treated prophylactically in puerperium by magnesium sulphate, morning and afternoon by mouth, or 20 cubic centimeters of a 10 per cent solution intravenously.

2. Milk diet and bed rest.

3. Blood pressure three times a day until it stays below 140.

(b) *If convulsions:*

4. Venesection, 700 to 800 cubic centimeters.

5. Morphin, grains one-fourth or one-sixth, three times a day, if necessary.

6. Chloral hydrate, 20 to 40 grains in 4 to 5 ounces of water, per rectum.

7. Phenolsulphonephthalein test.

8. Protection against injury if convulsions arise. Injury to child or patient due to mental aberration. The danger period is in the first week of the puerperium. Symptoms rarely appear or persist in eclampsia thereafter.

(c) *The management of the eclamptic convulsions:*

1. Constant attendance of a trained person if possible.

2. Mouth gag to protect the tongue.

3. Sufficient help to prevent self-injury during convulsion.

4. Reduce all stimuli to minimum. Dark room, few examinations, and manipulations. Morphin and chloral are useful.

5. Bleeding is best done by venesection under local anesthesia.

RESULTS

By the application of these principles we have handled two hundred and sixty-five cases of eclamptogenic toxemia with or without convulsions. These have practically all been clinical cases in the charity beds of the University of Iowa and University of Illinois teaching hospitals. While the writer supervised most of the cases personally and did nearly all of the major operative work, the ordinary deliveries and the conduct of the labors were in the hands of his intern and residents. The prenatal supervision was excellent in almost all cases, very few having eluded the vigilance of our out-patient staff. Of these cases we have classified two hundred and twenty-one as eclamptics and forty-three as nephritic toxemias, on the basis of the evidence at hand, six weeks after de-

livery when the case was finally summed up. A concentrated résumé of the findings is given in parts one to seven of the table.

CONCLUSIONS

1. The mortality in eclampsia in the United States registered area is on the increase, in spite of numerous demonstrations in special clinics that the disease can be practically eliminated by efficient management.

2. Considerable evidence points to the fact that protein metabolic end-products play an important part in the etiology.

3. Limiting the production, and promoting the excretion of these substances, will in most instances prevent the development of serious symptoms.

4. When serious symptoms arise, in spite of prophylactic treatment, suggesting the probable onset of the dangerous convulsive stage; the pregnancy should be terminated as conservatively as the exigencies will permit.

5. Cesarean section is advised only in the fulminating type of eclamptogenic toxemia or in the presence of a border-line or actual indication for other causes, such as contracted pelvis, placenta previa, cardiac or pulmonary disease. Cesarean section should never be undertaken in eclampsia without, first, an accurate estimation of the obstetrical problem involved; second, a competent operator familiar with obstetrical operations; and third, proper assistance and surgical surroundings.

6. The eclamptogenic baby is toxic, frequently premature and below par, and careful attention should be given to its delivery, resuscitation and immediate postdelivery management.

7. When serious symptoms arise and operative intervention is contraindicated, the Stroganoff method of treatment is advised, combined with the use of magnesium sulphate intravenously if convulsive seizures supervene.

8. No great general reduction in mortality is to be expected until medical students, practicing physicians, and even the laity, have a clear understanding of these salient underlying principles.

University of Illinois College of Medicine.

REFERENCES

- Litzenberg: *Journ. A. M. A.*, Vol. xci, No. 21, p. 1588, November 24, 1928.
 De Lee: *Principles and Practice of Obstetrics*, Fifth edition. Saunders & Company, 1928. Page 1029.
 Potter, I. W.: *Tr. Amer. Journ. Obs. and Gyn.*, Vol. xxxii, pp. 152-63, 1920.
 Vaughn, V. C.: *Protein Split Products in Relation to Immunity and Disease*. Lea and Febiger, Philadelphia and New York, 1913.
 Stroganoff: *Monatsch. fur. Gebutsh. U. Gyn.*, Vol. xxix, p. 508, 1909.
 Zweifel: *Dederlein's Handbuch*, Vol. ii, p. 708, 1916.
 Freund, R.: *Zentralb. fur. Gyn.*, No. 47, p. 551, 1918.
 Greenhill: *Jour. A. M. A.*, Vol. xcii, No. 8, p. 627, February 23, 1929.
 Lazard, A. M.: *Amer. Jour. Obs. and Gyn.*, Vol. ix, 178, February 1925.
 McNeile and Vruwink: *Jour. A. M. A.*, Vol. lxxxvii, 236, July 24, 1926.
 Einar, H.: *Amer. Jour. Physiol.*, Vol. xvi, 366, 1905.

Stander, H. J.: *Jour. A. M. A.*, Vol. xcii, 631, February 23, 1929.

Titus and Givens: *Journ. A. M. A.*, Vol. lxxiv, 777, 1920.

Stoechel: *Zentralbl. fur. Gyn.*, January 15, 1927.

A PRACTICAL CONSIDERATION OF CHOLECYSTOGRAPHY*

By B. R. KIRKLIN, M. D.

Rochester, Minnesota

PUBLISHED statistics on the accuracy of cholecystographic diagnosis vary rather widely. Aside from differences due to the personal equation, the variation may be attributed to: (1) present inability of the surgeon, anatomist, physiologist, and histopathologist to distinguish minutely between the normal and abnormal gall bladder; (2) lack of agreement as to what constitutes the normal or abnormal gall bladder; (3) use or non-use of clinical data in the making of cholecystographic diagnoses; and (4) variations in groups on which the statistics are based and in the methods of analysis.

Disease of the biliary tract is the most common abdominal lesion for which surgeons are called on to operate, and it is, therefore, of prime importance to determine who shall condemn or defend the gall bladder, whether the clinician, surgeon, roentgenologist, or pathologist.⁷ Although the clinician carries the major portion of the responsibility in determining whether the gall bladder should be subjected to surgical exploration, nevertheless he depends on the roentgenologist and surgeon for help and advice, and eventually he appeals to the anatomist, physiologist, and pathologist for fundamental knowledge. The chain of diagnosis of cholecystic disease is, therefore, no stronger than its weakest link.

Cholecystography has brought to the attention of the anatomist the fact that the gall bladder varies greatly in form and position according to the habitus of the individual. Cholecystography also has aided the physiologist in his efforts to ascertain more specifically the functional behavior of the gall bladder and its alteration by nonpathologic states. Mann¹¹ and other physiologists consider the gall bladder to be a rather temperamental organ, susceptible of influence by many remote conditions. The work of Mann and Higgins¹² indicates that a degree of stasis occurs during pregnancy. Boyden¹ concluded from his studies that gall bladders of women empty more quickly than those of men. Plummer,¹³ interested in the subject primarily as a clinician, has observed that a certain type of patient, characterized by being easily fatigued, by achlorhydria and by a low basal metabolic rate, is likely to respond eccentrically to

* From the Section on Roentgenology, The Mayo Clinic, Rochester, Minnesota.

* Read before the General Medicine Section of the California Medical Association at the Fifty-Eighth Annual Session, May 6-9, 1929.

cholecystography; the shadow is frequently faint or absent, although clinical evidence of cholecystic disease is lacking.

DEFINITION OF CHOLECYSTIC DISEASE

A more precise definition of cholecystic disease is necessary and the pathologist must supply this definition. There is no definite agreement as to just how much of a pathologic condition of the gall bladder is implied by pericholecystic adhesions.⁹ At any rate, such a gall bladder may concentrate dyes normally and, assuming that it is abnormal anatomically, it is questionable whether the abnormality constitutes disease of clinical moment. Definite disease does not always diminish the capacity for concentration of the dye nor, as shown by Kirklin, Caylor and Bollman,¹⁰ is the relation constant between the degree of concentration of bile and that of cholecystographic mediums. The significance of petty anatomic changes, visible only by aid of the microscope, is still debatable. Many times these changes which have been designated as cholecystitis, graded 1, that is, very mild cholecystitis, may represent traces of disease now healed or quiescent; in other instances abnormalities of equal extent are meaningless, and the gall bladder can be listed as normal. On the other hand,⁶ it has been noted that cholecystectomy is of benefit to a large number of patients with cholecystitis, graded 1, who have at any time had definite symptoms suggestive of cholecystitis, whereas those with atypical or slight symptoms derive little benefit from the operation. Obviously, there is a point at which even the microscope fails to distinguish with certainty between the normal and abnormal gall bladder, or at least fails to throw light on the clinical significance of slight departures from the normal. It is noteworthy that since cholecystography has been applied at The Mayo Clinic, the proportion of cases in which only mild cholecystitis was found at operation has steadily declined, whereas the percentage of cases with stones or marked disease of the gall bladder has increased.

Clinicians in general have maintained a most encouraging attitude toward this new method of diagnosis, and the warmest advocates of cholecystography do not have reason to complain of lack of coöperation. Some clinicians³ believe, however, that the responsibility of the final diagnosis should not be assumed by the roentgenologist, nor should any single laboratory test be depended on as infallible for the diagnosis of cholecystic disease, and I am in hearty accord with this belief. When all the facts have been gathered together from all sources, it is the function of the clinician to correlate them and to give each its relative value in the making of the final diagnosis.

EVALUATION OF CHOLECYSTOGRAPHIC DATA

In my own work I prefer to study and evaluate the cholecystographic data without cognizance of the clinical history. Intimate knowledge of the clinical history may assist the roentgenologist to make diagnoses when the cholecystographic data

are scanty or questionable, but such diagnoses are not roentgenologic. It is surprising, since there are such basic defects in the knowledge of the physiology and pathology of the gall bladder, that cholecystographic data are so rarely wrong and that the distinction between normal and abnormal function of the gall bladder, as originally laid down by Graham, Cole and Copher,⁴ has needed so little alteration. Naturally individual examiners vary considerably in the application of these data and conservatism of interpretation. I, for one, am inclined to be more liberal in appraisal of the normal and quite conservative in my judgment of the abnormal, realizing that cholecystography is primarily a test of the dye-concentrating ability of the gall bladder and, excepting in cases of stones, not a means of demonstrating pathologic changes directly.

TECHNIQUE

Several drugs have been employed since Graham's original work, but none has been superior to the sodium salt of tetraiodophenolphthalein. Different observers vary in their opinion as to the relative value of intravenous and oral administration of the drug. Those who are partial to intravenous administration insist that the oral method is unreliable unless the result indicates a normally functioning gall bladder. On the other hand, most examiners are using the oral method. If it is desirable to determine the function of the liver and gall bladder simultaneously, the intravenous administration of sodium phenoltetraiodophthalein is indicated.⁵ Although intravenous administration makes it certain that a full dose has been introduced into the circulation and excludes any question of absorption, the occasional reaction encountered, even in the presence of rigid precautions, makes one hesitate to urge its use as a routine. In view of added responsibility and necessary hospitalization, the intravenous method has the disadvantage of increasing the patient's expense materially.

The oral method is not associated with risks or contraindications, and it lends itself to general employment. It is true that nausea, purging, or vomiting occur occasionally. The most common objections urged against this method are: (1) the patient may fail to take the drug as directed; (2) the dye may be vomited shortly after it is taken; and (3) it may fail to be absorbed adequately or at all by the intestine, thereby producing dense shadows overlying the gall bladder. Experience indicates that none of these objections are significant. In order to check the accuracy of the oral method, I had the dye given intravenously in a large number of cases in which I had failed to obtain a shadow of the gall bladder following the oral administration of the drug; from the results obtained I came to the conclusion that the oral administration of cholecystographic drugs is as reliable as intravenous administration. My experience, as well as that of other observers, shows that the accuracy of the oral method compares

favorably with that reported by partisans of the intravenous technique.

During the last eighteen months I have employed sodium tetraiodophenolphthalein in aqueous solution. The patient receives 4 grams of the drug dissolved in 30 cubic centimeters of distilled water, and is instructed to add it to a glassful of grape juice and take it immediately following his evening meal. He is instructed to take the usual quantity of food for his evening meal, but to eliminate fats. It has been my experience that better results are thus obtained than when a light evening meal is taken. Roentgenograms are made at the fourteenth, sixteenth, and twentieth hours. The taking of food is prohibited until after the sixteenth-hour roentgenograms are made, at which time a fatty meal, consisting of a glass of half cream and half milk, with other food, is taken. Usually this meal has the effect of only partially emptying the gall bladder at the twentieth hour and may make possible the discovery of stones at this period, whereas egg-yolk, which is commonly used, evacuates the viscus completely. Since the use of the technique described, nausea has rarely followed, and clumps of unabsorbed dye are less frequently noted in the bowel. The technique appears to excel any yet proposed for oral administration.

INTERPRETATION

In view of the fact that cholecystography is a test of the concentrating ability of the gall bladder, it is obvious that the most difficult item of interpretation is the determination of what constitutes normal density of the cystic shadow. Density varies not only with the drug employed and the quantity prescribed, but has a considerable range of variance under comparable conditions, and the personal equation inevitably influences judgment. It varies at the different periods, but the shadow usually is denser at the sixteenth hour than at the fourteenth; at the twentieth hour, a fatty meal having been taken in the meantime, the shadow most often will have been reduced to about half the size shown at the sixteenth-hour examination, although it may disappear entirely. The sequence, however, is not inflexible, and the shadow may be most dense at any one of the three periods. As a rule, the shadow will be slightly larger at the second period than at the first, although the reverse is sometimes true; here again the sequence is less important than the fact of changing size which is an indication of elasticity of the wall of the gall bladder. In persons of asthenic habitus the gall bladder is likely to be long, slender, or even pointed; in those of sthenic or hypersthenic habitus it is usually short and rounded, but exceptions are numerous, and the general form is without significance. Its normal position is widely variable and it may be seated high or low, mesially or laterally, without meaning. In the slender patient it usually lies low and mesially, whereas in those of the broad habitus it is most often situated high and laterally. The shadow should be homogeneous in the sense of not having persistent thin areas or dense spots. On the whole, and with few exceptions, judgment

should be based not on its worst, but on its best appearance at any stage of the examination.

There still exists some difference of opinion as to the value of the various signs of disease, and summarization of the general opinion would be difficult. Some observers stress the importance of deformities of the contour of the shadow of the gall bladder as indicating adhesions, whereas others are more liberal in their appraisal of the faint shadow. I shall emphasize only those signs which I have found reliable. Assuming that any lapse of technique can be excluded, the reliable indications of cholecystic disease comprise only three varieties of abnormality in the shadow of the gall bladder: (1) absence of any shadow; (2) persistent faintness of the shadow; and (3) mottling of the shadow. Although absence of a shadow may be the result of failure of the dye to be absorbed by the intestine, or occasionally from extensive disease of the liver, experience has shown such causes to be rare, and this negative sign can be construed consistently as an index of disordered function. I would insist strongly on the necessity for caution in pronouncing a shadow to be faint, for normal concentration has a wide latitude, and only a shadow which is scarcely visible at all periods can safely be considered faint. Mottling of the shadow, either by denser spots or translucent areas, is indicative of stones when superimposed gas, calcified lymph nodes, and ossification of the costal cartilages or transverse processes can be barred. A shadow of the gall bladder that remains fixed in size and density throughout is suggestive of a shadow produced by a diseased gall bladder without the assistance of dye, and such a patient should be reexamined without the dye.

Irregularities of contour have been of little, if any, significance in my experience and seldom denote intrinsic disease. Gall bladders buried in adhesions will cast shadows with perfectly smooth contours; on the other hand, an irregular contour will appear in an otherwise normal cholecystogram, when the gall bladder is found at operation to be free from adhesions or deformity. Marked serration of the border, with the shadow fixed in position and in the same situation at all periods, has been seen occasionally in cases with dense adhesions, and a single band of adhesions may produce an incisura with hourglass deformity of the gall bladder. As the function of concentration is preserved, the gravity of the condition is doubtful, and its cholecystographic manifestation is rare, for in most instances adhesions, however dense, do not cause deformity of contour. Angulation at the neck of the gall bladder does not have pathologic import. The size of the normal gall bladder varies considerably during fasting. Although further experience may prove that delayed filling and its opposite, retarded emptying, are indicative of disease, I have not yet been able to attach significance to either alone.

Since cholecystography is preëminently a test of the ability of the gall bladder to receive and con-

concentrate dye-laden bile, and since this capacity does not have a constant relation to health or disease, it would seem that the roentgenologist's report to the clinician should be in terms of function only, rather than of anatomic condition. Accordingly, at The Mayo Clinic reports are made in one of three forms: (1) normally functioning gall bladder, (2) poorly functioning gall bladder (when the shadow is persistently faint), and (3) nonfunctioning gall bladder (when a shadow of the viscus is not seen). Evidence of stones may be associated with any of the three types, and is so reported.

ACCURACY

Cholecystography at The Mayo Clinic has increased progressively in accuracy during the last four years.⁸ During that time 25,191 examinations were made and 3517 patients operated on. During the last two years the general accuracy of all cholecystographic diagnoses has been 90 per cent. In 97 per cent of the group of cases in which gall stones were found at operation the cholecystograms indicated a poorly functioning or nonfunctioning gall bladder. In only 40 per cent were gall stones manifest as dense or translucent areas and diagnosed as stones. Of the cases in which the gall bladder was diseased but did not contain stones there was evidence of disturbed function in approximately 80 per cent, whereas in 20 per cent the gall bladder was apparently deporting itself normally. Among the cases in which the gall bladder was pronounced normal by the surgeon and by the pathologist, cholecystograms indicated a normal condition in 90 per cent.

To analyze the cases from the standpoint of the various types of roentgenologic data, the series may be divided into four groups: (1) nonfunctioning gall bladder with and without stones, (2) poorly functioning gall bladder with and without stones, (3) normally functioning gall bladder with stones, and (4) normally functioning gall bladder without stones.

In 77 per cent of the first group the diseased gall bladder was found to contain stones at operation; in 18 per cent the gall bladder was diseased, but did not contain stones, and in 5 per cent the gall bladder was considered to be normal by the surgeon or by the pathologist or by both. In short, in 95 per cent of the cases of nonfunctioning gall bladder the diagnosis was confirmed at operation.

In 74 per cent of the second group cholecystic disease with stones was found at operation; in 20 per cent definite disease of the gall bladder was present without stones, and in 6 per cent the gall bladder was normal. The total accuracy of diagnosis in this group was 94 per cent.

In all the cases in the third group, in which the interpretation was that the gall bladder was normally functioning and contained stones, the diagnoses were confirmed at operation.

It is in the fourth group, in which a normally functioning gall bladder was reported, that the

highest percentage of error occurred. At operation, cholecystography was found to be in error in 18.5 per cent of the cases. In a few cases stones were found. That the cholecystogram indicative of normal conditions should be relatively less reliable than the one indicating abnormal conditions is contrary to general expectation. It is compatible, however, with the work of Caylor and Bollman,² who have shown that the function of concentrating bile may be preserved or even enhanced despite advanced disease of the gall bladder. They have shown that in certain types of cholecystic disease the entire organ is not necessarily involved; there may be hyperfunctioning areas, impaired areas, and normal areas.

SUMMARY

In retrospect, the history of cholecystography is brilliant. It is remarkable in that it has not undergone essential changes during its five years of existence. Even more remarkable is the high efficiency which it attained at the outset and which it has held without remission. Whatever progress it may make in the future will depend primarily on general expansion of knowledge regarding the physiology and pathology of the biliary tract; and it even offers a method by which some of this knowledge can be gained.

The Mayo Clinic.

REFERENCES

1. Boyden, E. A.: Sex Differences in Contraction Rate of the Human Gall Bladder, *Proc. Soc. Exper. Biol. and Med.*, 1927, xxiv, 353-358.
2. Caylor, H. D., and Bollman, J. L.: The Bilirubin Content of Gall-Bladder Bile in Cholecystic Disease, *Arch. Path. and Lab. Med.*, 1927, iii, 993-1001.
3. Eusterman, G. B.: Limitations of Cholecystography with Which Physicians Should Be Familiar, *Jour. Am. Med. Assn.*, 1928, xc, 194-197.
4. Graham, E. A., Cole, W. H., and Copher, G. H.: The Roentgenological Visualization of the Gall Bladder by the Use of Intravenous Injections of Sodium Tetrabromphenolphthalein, *Radiology*, 1925, iv, 83-88.
5. Graham, E. A., Cole, W. H., Copher, G. H., and Moore, Sherwood: Cholecystography—The Use of Phenoltetraiodophthalein, *Jour. Am. Med. Assn.*, 1926, lxxxvi, 1899.
6. Judd, E. S.: Cholecystitis, *Northwest Med.*, 1926, xxv, 167-171.
7. Judd, E. S.: Cholecystitis, *Northwest Med.*, 1927, xxvi, 377-381.
8. Kirklin, B. R.: Efficiency and Limitations of Cholecystography, *Boston Med. and Surg. Jour.*, 1928, cxvii, 1487-1493.
9. Kirklin, B. R.: The Normal Cholecystographic Response, *Radiology*, 1928, xi, 34-36.
10. Kirklin, B. R., Caylor, H. D., and Bollman, J. L.: The Concentration of Cholecystographic Mediums and Bilirubin by the Gall Bladder, *Radiology*, 1927, ix, 463-469.
11. Mann, F. C.: A Physiologic Consideration of the Gall Bladder, *Jour. Am. Med. Assn.*, 1924, lxxxiii, 829-832.
12. Mann, F. C., and Higgins, G. M.: Effect of Pregnancy on the Emptying of the Gall Bladder—A Preliminary Report, *Arch. Surg.*, 1927, xv, 552-559.
13. Plummer, H. S.: Personal communication.

MASKED OTITIS MEDIA AND MASTOIDITIS IN INFANCY*

REPORT OF CASES

By EDWARD S. BABCOCK, M. D.

AND

J. ROY JONES, M. D.

Sacramento

BY masked otitis media or mastoiditis is meant an infection of the middle ear, or mastoid with symptoms referable to some distant part of the body. The local signs are usually absent or differ from those ordinarily found.

FREQUENCY

Over thirty-five years ago European investigators reported finding a purulent inflammation of the middle ear at autopsy in about four-fifths of all dead nurslings, and its frequency, in association with intestinal disturbances, was noted. It was thought that this type of otitis found in cachectic infants was due to lowered resistance and was purely latent or concomitant. These terms have existed in the textbooks up to the present time.

The frequency with which otitis media is found in infancy makes it imperative that the ear-drums be examined regularly without regard to indicative symptomatology. Fortunately this is realized at the present time by most practitioners, and acute otitis is recognized early by the red, bulging drum. The ear-drum of masked otitis and mastoiditis is seldom red, and there is often little or no bulging. Spontaneous perforation is rare. Postauricular swelling, redness, and tenderness do not occur. However, there is always some discernible change in the drum or canal wall when carefully examined. This examination is at times difficult, as the external canals in infants often are very small and may be filled with débris, such as wax, soured milk, and desquamation. This débris must all be removed with small curettes, swabs or other suitable instruments, as irrigation seldom will remove it. Care must be taken not to irritate the surface of the drum, as irritation may simulate the appearance of infection. It is impossible to examine some of these drums through a speculum with an opening larger than three millimeters in diameter. If walled-off pus is in the mastoid antrum, there is usually a sag of the posterior canal wall adjacent to the drum, and the drum has lost its normal luster. There is no cone of light. The color is more often dull gray or creamy white than dull red or pink. It must be remembered that the normal drum of the newborn in the first few days or weeks may have a similar appearance. Alden,¹ after examining a large number of these ears, said: "We soon found that with the electric otoscope, with brilliant illumination and some magnification, we were able to see cer-

tain signs of middle-ear disease which with the head mirror and reflected light we had previously overlooked."

CAUSAL RELATIONSHIPS

In the last few years, many articles have appeared in the literature regarding these infections. Most of this work has been done on babies in whom the otitis was associated with severe gastrointestinal disturbance, *i. e.*, athrepsia, anhydremia. The question naturally arises as to whether the ear infection is the cause of the diarrhea or the diarrhea the cause of the ear infection, or at times whether both are caused by a common nasopharyngeal infection. It is probable that most of these infections of the middle ear and mastoid are the result of bacterial invasion from the nasopharynx through the eustachian tube, although it has apparently been proven that some are intestinal in origin, as organisms of the intestinal group have been found in cultures from both the blood and mastoid.² Marriott³ in 1925 suggested that in severe anhydremia a streptococcus toxin is liberated which has a specific action on the capillaries of the body, especially of the intestinal tract. Since all cases are not streptococcal we must assume the probability of other bacterial toxins as well as those of the streptococcus. The possible absorption of certain toxic amines, such as histamin and tyramin, has aroused some comment and research. It must also be borne in mind that a severe enteritis may exist with no distant focus of infection. These questions probably will be fully worked out in the future. Regardless of theory it has now been proven without doubt that early surgical drainage of the focus of infection, when present, together with proper medical treatment will save most of these otherwise moribund infants.

Aside from the enteritis cases we have found many symptoms of these ear infections referable to the various systems of the body. Cough, snuffles, anorexia, vomiting without intestinal disturbance, fretfulness, convulsions, paralyses and extreme toxicity have been repeatedly seen, which cleared after drainage of the middle ear or mastoid. While there is usually some elevation of temperature and increase in the white blood count, these may be normal. From our experience in private practice we feel that this heterogeneous group deserves far more attention in relation to the enteritis group than it has been accorded, and that these cases are too often overlooked.

The eustachian tube of the infant is relatively short, horizontal and large, compared with that of older children and adults. Alden⁴ gives this as the reason why the ear-drum so frequently is not bulging when paracentesis reveals pus in the tympanic cavity, as there is free drainage into the nasopharynx. This drainage also explains the frequent occurrence of cough or snuffles, which we have found with no demonstrable pathology except the otitis. Whether the other symptoms men-

* Chairman's address, Pediatrics Section, Fifty-Eighth Annual Session of the California Medical Association, May 6-9, 1929.

tioned are all toxic effects or whether there are other explanations, cannot be said at the present time.

TREATMENT

The treatment of these cases is both medical and surgical, and the otologist and the pediatrician must work in closest harmony. The opening of a questionable ear-drum does no damage; if there is any question as to the presence of infection in the middle ear, a diagnostic paracentesis should be performed. In those cases with resultant drainage and definite improvement in the condition of the patient further surgical procedure is unnecessary. The incision tends to heal before infection has subsided, and it is sometimes necessary to incise the drum every few days to maintain drainage.

The mucosa of the attic, aditus, and antrum in the infant is yet embryonic in type and, when infected, swells sufficiently to separate them entirely from the middle-ear cavity. When this separation is complete, antrotomy is necessary, as the antrum cannot drain, in spite of free drainage from the middle ear. When is operation indicated clinically? First, in the very toxic cases with sudden dehydration and collapse, no time should be wasted in opening the antrum, regardless of free drainage from paracentesis of the drum, as this type of infant may die in only a few hours or days. Second, in those infants who show definite or suggestive signs of mastoid involvement, as dull or dirty gray tympanic membranes and sag of posterior canal walls, in whom there is no middle-ear drainage after paracentesis, antrotomy should also be done without temporizing, as severe toxic symptoms may appear unheralded very rapidly, followed by sudden death. Third, in those cases of purulent otitis with minor symptoms, such as cough or failure to gain weight, in whom repeated paracentesis fail to cause improvement, antrotomy is indicated. Only experience and good clinical judgment can help to decide when operative interference is indicated in some cases of this group. We have seen the ear return to normal and symptoms disappear after paracenteses, repeated every few days over a period of six to eight weeks. However, it is probably safer to establish antrum drainage much earlier than this, as there is not only the danger of sudden toxic effects, but also of meningitis, even though we be dealing with a very low grade type of infection. Operation should be performed, of course, only after all possible sources of infection which might cause the symptoms have been eliminated, or at least only after a sincere endeavor to eliminate them has been made.

Renaud⁵ in 1921 reported ten cases on whom mastoid antrotomies were performed, with nine deaths. Lyman and Alden⁶ had eight recoveries and seven deaths out of their first series, and only eight deaths out of forty-three cases in a later series. Other reports show a similar decreasing

mortality. This lowered mortality is accounted for by two factors: First, the infants receive operation before they are *in extremis*, as formerly; and, second, the operation is much simpler and shorter. The technique of antrotomy varies with the individual surgeon. Either a local anesthetic or as short a general anesthesia as is necessary for establishing the proper antral cell drainage is indicated. Alden¹ advocates local novocain anesthesia with careful curettage of all granulations from the antral cell. Canuyl⁷ reports operating on twenty-seven infants with no fatalities, using ethyl chlorid local anesthesia, and making a simple opening into the antrum without curettage. Older infants who have developed more mastoid cells necessarily require more than this simple antrotomy. Nitrous oxid and oxygen has been tolerated very well in the few cases in which it has been used and has the advantages of general anesthesia.

The medical treatment cannot be so concisely outlined as the surgical, as this of course will depend on the type of symptomatology. Suitable feeding with concentrated high calorie formulas must be given to those failing to gain weight. Thick cereal feedings often help the vomiters, and high calorie formulas, which leave little residue in the bowel (this precludes milk), are helpful when diarrhea is present. Symptomatic treatment of convulsions, insomnia, cough, etc., is indicated when these are present. In the athreptic group with diarrhea, dehydration, and acidosis, the administration of parenteral fluids is of paramount importance. Recent studies⁸ on the acid-base equilibrium of the blood plasma and the retention of phosphoric acid and nonprotein nitrogen in these infants show that glucose and sodium bicarbonate solution must be given as long as diarrhea, vomiting, dehydration, and acidosis persist. According to Hartman the administration of large amounts of saline solution is contraindicated, due to the production of acidosis. In preparing the glucose and sodium bicarbonate solution, chemically pure sterile triple distilled water is used. The glucose is dry-sterilized before going into solution. The sodium bicarbonate solution is made under reduced oxygen tension and tested for sodium carbonate content before use. Ampoules of the concentrated solutions are on the market which can be diluted when ready for use. It is important that these be not boiled in heating, as the bicarbonate is broken down to carbonate and the glucose caramelizes. The intravenous, intraperitoneal and subcutaneous routes are all employed, as well as the oral, when large amounts of fluid are required. Two and a half per cent glucose solution is usually given subcutaneously, and five per cent given intraperitoneally and intravenously, one-fourth to one-half of one per cent sodium bicarbonate being in the same solution. Three hundred to one thousand cubic centimeters may be given daily parenterally, depending upon the needs of the case and on the amount retained by mouth. In the more chronic types of infec-

tions small blood transfusions repeated every few days, ultra-violet light, and vaccines are often of the greatest importance.

REPORT OF CASES

CASE 1.—C. S., female, age eleven months. Had a history of slight cough and running nose for six weeks with no other symptoms. She then became doxy and irritable, and the temperature rose to 103 degrees for two days. This was followed by generalized convulsions, most marked on the left side of the body. The fontanelle was slightly bulging. The right pupil was dilated. Ear-drums were both about normal color, but had poor sheen and bulged slightly. Flaccid paralysis of right leg and left arm with absent tendon reflexes. Normal muscle tone and reflexes of right arm and left leg. A bilateral myringotomy was performed with resultant drainage from ears. The cerebrospinal fluid was negative except for increased pressure. After two days the paralysis had entirely disappeared and the temperature remained normal.

CASE 2.—T. O., male, age seventeen months. Entered hospital January 15. There had been severe diarrhea for six days. The child was markedly dehydrated and toxic and appeared moribund. The throat was red. The left ear-drum was normal. The right ear-drum was normal except for a few injected vessels in the posterior superior quadrant. Urine showed albumin, casts, and blood cells. White blood count was 25,000. Glucose and sodium bicarbonate solution were given parenterally daily, with very slight, if any, improvement. On January 18 the right ear-drum was slightly bulging posteriorly. The left was pink in the posterior superior quadrant. Bilateral myringotomy showed considerable mucopus in the right, and very little in the left ear. On January 21 there was no improvement. White blood cells numbered 39,500. Bilateral mastoidectomy showed the right antrum filled with pus debris, and necrosis of lining tissue. Culture showed pneumococcus. Mucopus from the left antrum was sterile when cultured. On January 23 child was markedly improved and moved arms and legs for the first time since entering hospital. White blood cells numbered 5000. Slight decrease shown in number of stools. On February 18 patient was dismissed. Stools, blood, and urine were normal. Child acted normally.

CASE 3.—G. L., male, age three months. This child had fretted and moaned as if in pain since shortly after birth. The parents said this became aggravated and was accompanied by high fever for four or five days before examination was made. There were no other symptoms and the babe had consistently gained in weight until fever set in in the last few days. Examination showed early dehydration and a very toxic-appearing infant. The ear-drums were pale, but dull. There was no bulging. The posterior superior canal wall adjacent to the drum was slightly sagging. Physical examination was otherwise negative. The urine showed albumin, casts, and some blood cells. White blood cells numbered 11,000, with 73 per cent polymorphonuclear leukocytes. Temperature was 104 degrees. X-rays of head, chest, and long bones were negative. Intradermal tuberculin and blood Wassermann tests were negative. Paracentesis of ear-drums revealed no pus in middle ears. The temperature rose rapidly, the child became cyanotic and expired. Autopsy revealed pure creamy pus in both mastoid antra. No other pathology found.

CASE 4.—R. DeJ., male, age thirteen days. A "cold in the head," with snuffles, was noticed when the baby was two or three days old, which persisted. On the eleventh day vomiting and diarrhea commenced. On

the twelfth day, when he was first examined, he showed signs of moderate dehydration, toxicity, and bilateral otitis only. Bilateral myringotomy was followed by free drainage. The condition of the patient seemed to warrant conservative treatment and antrotomy was delayed. When seen the next morning he was the picture of terminal athrepsia. He was given more fluids, but expired before antrotomy could be performed. Autopsy disclosed both mastoid antra full of pus.

CASE 5.—J. C., male, age eight weeks. History of "cold in head and chest" for two weeks, accompanied by vomiting and rather loose stools. Weight seven and one-half pounds. Nutrition was rather poor. There was generalized infection of the upper respiratory tract and bilateral otitis media. The temperature remained normal. White blood cells numbered 10,600, with 31 per cent polymorphonuclear leukocytes. Urine was negative; x-ray of chest, negative. After bilateral myringotomy there was improvement in the cough and vomiting. Six paracenteses had to be performed in the next two weeks to maintain drainage. The improvement after the first few paracenteses was only temporary, and from then on the child's condition remained stationary, so that after two weeks of this conservative treatment a bilateral antrotomy was performed. Mucopus was found in both antra although cultures were sterile. There was no vomiting after the day of the operation, and the child was dismissed in fourteen days, weighing over nine pounds and in normal health.

SUMMARY

The paper deals with the type of infantile otitis media and mastoiditis wherein the ear infection is masked, as the symptoms are referable to some distant part of the body.

The ear-drum is more often dull gray or creamy white, with little or no bulging, than it is red and bulging. With walled-off pus in the mastoid antrum there is usually a sag of the posterior superior canal wall adjacent to the drum. These drums are best seen with an electric otoscope and small speculum.

Many moribund infants, especially those with severe gastro-intestinal or nutritional disturbances, can be saved by drainage of the focus of infection in the ear.

Aside from the enteritis, cough, anorexia, snuffles, vomiting, fretfulness, convulsions, extreme toxicity, and occasionally paralyzes are among the symptoms which may be due to hidden ear infection. Fever and leukocytosis may be absent.

Repeated myringotomies may be necessary to maintain middle-ear drainage. Mastoid antrotomy is indicated (1) when repeated myringotomies for purulent otitis fail to cause improvement, (2) when the infant is markedly toxic in spite of free middle ear drainage, and (3) in the toxic infant when the ear examination suggests infection although myringotomy reveals no pus in the middle ear.

In the athreptic group with diarrhea, acidosis, and dehydration, glucose and sodium bicarbonate solution should be given parenterally, according to the needs of the individual and the amount of fluid retained by mouth. The feeding and symp-

tomatic treatment will vary with the type of case at hand.

Several selected cases seen in private practice are reported to illustrate varying types of symptomatology.

820 Medico-Dental Building.
508 California State Life Building.

REFERENCES

1. Alden, A. M.: Gastro-Intestinal Disturbances in Infants as a Result of Streptococcus Infection in the Ears, South. Med. Jour., 19:5, May 1926.
2. Dick, G. F., Dick, G. H., and Williams, J. L.: The Etiology of an Epidemic of Enteritis Associated with Mastoiditis in Infants, Am. Jour. Dis. Child., 35:6, June 1928.
3. Marriott, W. M.: Observations Concerning the Nature of Nutritional Disturbances, Tr. Am. Pediat. Soc., 1925.
4. Alden, A. M.: Mastoid Infections in Infants, Arch. Otolaryngol. 5:39, January 1927.
5. Renaud, M.: Bull. et Mém. Soc. Méd. d' Hop. Paris, 45, p. 1326, 1921.
6. Lyman, H. W., and Alden, A. M.: Gastro-Intestinal Disturbances in Infants as a Result of Ob-
scure Infection in the Mastoid, Tr. Am. Laryng. Rhin. and Otol. Soc. 1925, and Laryngoscope, 35:586, 1925.
7. Canuyt, G.: The Rapid Death in Infants Operated on for Mastoiditis with a Discussion of the Operative Technique and Results, Rev. Franc. de Pediat., 4:101, 1928.
8. Hartmann, A. F.: Chemical Changes Occurring in the Body as the Result of Certain Diseases, Am. Jour. Dis. Child., 35:4, April 1928.

UTERINE FIBROIDS*

FUNDAMENTALS IN THE APPLICATION OF ROENTGEN RAYS

By FRED LINDENBERG, M. D.
Los Angeles

DISCUSSION by Frank W. Lynch, M. D., San Francisco;
William H. Sargent, M. D., Oakland; H. J. Ullmann,
M. D., Santa Barbara.

ROENTGEN-RAY therapy of fibromyomata, in spite of many excellent results, has met with a great deal of adverse criticism by a large part of the medical profession. As with many other new therapeutic agents, the pendulum has swung from the heights of early enthusiasm to the depths of disappointment. The viewpoints of the radiologist and the surgeon are usually so contradictory that the general practitioner is confused as to what is the best and most rational treatment for patients with fibroid pathology.

It is the writer's viewpoint that radiologic methods of therapy, from the standpoints of safety, painlessness and economy, offer many advantages over operative methods.

Many surgeons who, at its first introduction, gave radiologic methods an impartial consideration have become prejudiced against it. There were too many failures among the radiated cases, and increased difficulties in surgical procedures were encountered after such therapy.

One of the main causes of failures in the experimental stage of roentgen therapy was the

assumption that the fibroid, as such, was amenable to x-rays.

These failures restricted the use of x-ray therapy to certain types of tumors. Because fibromyomata do not represent a uniform pathology and differ regarding their seat and their degenerative changes, it was found that the treatment should vary accordingly. The massive dose at first used was reduced to a castration dose, directed, as the name implies, against the ovaries.

Gynecologic clinics which have the roentgen armamentarium under their direct command, and which can, therefore, be unbiased in their choice of a therapeutic agent, have in the course of time and experience worked out the indications and technique for the roentgen therapy of fibroid tumors. It is the writer's opinion that such clinics quite uniformly agree that in properly selected cases, which amount to about 15 to 30 per cent of all fibromyomata, roentgen ray therapy offers an ideal therapeutic agent.

The results which have been recorded since adherence to the strict indications have been excellent. In this connection some statistics of several of the larger gynecological hospitals may be quoted: *A. Freund*—175 patients, 2 per cent failures; *Stager*—121 cases, 6 per cent failures; *E. Zweifel*—222 cases, 2 per cent failures; *Vogt*—1300 cases, 1 per cent failures; *Martindale*—5 per cent failures; *Stoeckel*—nearly 100 per cent successful.

This paper aims particularly to present the contraindications and indications of roentgen-ray therapy in the treatment of fibroid tumors.

EFFECT OF ROENTGEN RAYS ON THE TUMOR

Before the subject is discussed in detail, the manner in which the rays effect the shrinking of the uterine fibroid may be considered.

Beclère and others maintain that the rays cause, by stimulation of the tumor itself, a proliferation of the endothelium of the small vessels, followed by an obliteration of the blood supply of the tumor, thus shrinking the fibroid mass. In spite of many discussions in the literature, there is no positive proof that a castration dose of x-ray radiations affects the fibroid cells *per se*. All pathologists agree, however, that their action notably depends on their destructive influence on the ovaries—on castration.

If the follicles are destroyed and their function annihilated, the hemorrhages stop and the fibroid shrinks or disappears. In this same manner nature often brings about a cure of interstitial fibroids after the menopause. It follows, then, that, in order to treat fibroids successfully by roentgen ray, we must radiate to the point of amenorrhea, that is, we must give a castration dose.

GENERAL CONTRAINDICATIONS

These include: (a) Young women; (b) Women who wish to bear children; and (c) Nervous women.

(a) Younger women in whom we wish to preserve ovarian function should not be radiated. Such younger patients show better results from

* Read before the Radiology Section of the California Medical Association at its Fifty-Seventh Annual Session, April 30 to May 3, 1928.

myomectomy or hysterectomy. Surgical interference in which the ovaries can be preserved is doubtlessly a lesser insult than a climacterium praecox with its intense disturbances. The age limit must be determined by, and be left to the judgment of the physician.

(b) Women who wish to have children, for the same reason, should be excluded from radiation therapy.

(c) Very nervous women are more benefited by operation with preservation of the ovarian function; because in such patients the sudden exclusion of the ovarian hormone often aggravates the unbalanced nervous system.

SPECIFIC CONTRAINDICATIONS

In dealing with any abdominal tumor, difficulties are often encountered in ascertaining the right diagnosis. There is scarcely a more dangerous agent in the whole field of medical therapy, and one which can raise more havoc than roentgen rays, if improperly applied. It is, therefore, important to discuss under specific contraindications some of such conditions:

1. *Mistaken Fibroids*.—Such growths which are at times radiated include: (a) pregnant uterus; (b) ovarian tumors; (c) pyosalpinx.

(a) *Pregnant Uterus*.—Patients of this type who consult their physician are ordinarily near, or well in the climacteric age. They give a history of distinct signs of climacteric disturbances with prolonged menstrual intervals, or climacteric amenorrhea. The differential diagnostic possibilities of such cases may tax the judgment of the gynecologist to the utmost. There is no excuse, however, for having such patients radiated. A pregnant woman is characterized by her amenorrhea, or at times by irregular bleeding, symptoms which are absolute contraindications for radiation.

Fibroids which are not bleeding, if they need any therapy at all, should be dealt with only surgically. If a tumor grows as fast as a pregnant uterus, we have doubtlessly to deal with a severe malignancy. Such a condition demands other methods of treatment.

More conceivable is the radiation of a fibroid tumor complicating pregnancy. In such patients, with the increased circulation of pregnancy, a rapid growth of the fibroid calls for attention.

The consequences of radiation of pregnant uteri are tragic. Peculiarly, pregnancy not only goes on in most cases, but women go past term. If irradiation was given in the first months of pregnancy serious fetal injury, such as monsters, are the rule. If given after the third month, the fetus when delivered is very small and delicate, with an underdevelopment of the subcutaneous tissue. The loose and yellowish discoloration of the skin gives the fetus a senile expression. Mental deficiency is almost certain to develop in later years. As soon as the mistaken diagnosis is recognized the induction of a therapeutic abortion is an absolutely imperative procedure.

(b) *Ovarian Tumors*.—An ovarian tumor, especially of malignant pathology, is usually hard and intimately attached to the uterine body, thus

simulating a fibroid mass. While it may be impossible to distinguish the nature of such pathology by bi-manual examination, these tumors are especially characterized by irregular hemorrhages. Tumors with bleeding of a metrorrhagic type should always be excluded from roentgen-ray therapy.

(c) *Pyosalpinx*.—These tumors, if attached to the uterus, may simulate fibromyomata. The history of such patients will usually give us a hint as to the inflammatory character of the mass. The damage of radiation in these patients is usually not serious. In some cases, especially if due to gonorrheal infection, the symptoms may even diminish with the amenorrhea after castration.

2. *Certain Types of Fibroids*.—Here may be included: (a) Degenerated fibroids; (b) Submucous fibroids; (c) Large fibroids; (d) Fibroids with malignant degeneration.

(a) *Degenerated Fibroids*.—In such cases our endeavor should be to remove the pus and to eliminate the danger of sepsis and peritonitis. Operation is, therefore, imperative.

(b) *Submucous Fibroids*.—The bleeding in this type of tumor is not only caused by the ovarian function, but also mechanically by an erosion of the overstretched thin-walled veins in the endometrium. The type of bleeding is mostly irregular (metrorrhagic). Radiation of such tumors is not only without success, but, if the tumor is big and the intensive dose is applied by the radiologist, the life of the patient is, at times, endangered; for radiation of such tumors causes an involution of the uterus, and obliteration of the blood supply, and possibly a necrosis of the tumor. Apart from the metrorrhagic type of bleeding, other symptoms and signs, such as cramp-like pains, a short or gaping cervix, will help to clear the diagnosis of submucous fibroids. The consistency of these tumors is rather elastic; enlargement is uniform, not with an irregular and nodular surface.

(c) *Large Myomata*.—Tumors of the size of over five months' pregnancy and those which cause pressure symptoms on the neighboring organs, especially bladder and rectum, are here in mind. It is not so much the size of the tumor, but the fact that it would take several months to bring about adequate shrinking, that will often make a hysterectomy the treatment of choice.

Pressure symptoms on the bladder may be worthy of special comment. In the patient giving symptoms of tenesmus and frequency, the fibroid must have considerable size or must be developed cervically. Repeatedly patients have come under observation with fibroids the size of a fist and smaller, complaining of these urinary afflictions. Such complaints cannot possibly be due to pressure from such small tumors, but are hormonal disturbances (climacteric bladder symptoms).

Real pressure symptoms, such as dribbling and frequency, manifest themselves in a different way. At first such symptoms are recognized by the patient at intervals during menstruations, when hyperemia is causing a swelling of the fibroid

tumor. As the tumor assumes a greater size, these phenomena become constant.

(d) *Malignant Degeneration of Fibroids—Examples of Such, as Carcinoma and Sarcoma.*—Such coincidences are not rare. Statistics show a great number of such cases, especially in nullipara and in virgins at the end of the fourth decade.

The carcinoma is characterized by its metrorrhagic type of bleeding, its fresh-colored blood, and foul-smelling discharge. If such procedure is necessary or advisable, an exploratory curettement and microscopic examination will ascertain the diagnosis.

The diagnosis of sarcoma is at times much more difficult. For the sarcomata often do not bleed at all. A rapid growth, years after climacteric amenorrhea, is pathognomonic of sarcoma. A fibroid grows only as long as the ovaries are functioning. With the change of life a fibroid either retains its size or retrogresses.

If surgery should be deemed not advisable in such cases, heavy dosage of x-ray in combination with radium might be used as a palliative treatment.

INDICATIONS FOR ROENTGEN-RAY THERAPY

Gynecologic clinics, especially in Europe, which have their own roentgen units show in their statistics the employment of x-rays for 15 to 30 per cent of all fibroids.

The gynecological indications for x-ray therapy of fibroid tumors can, indeed, be summarized with one simple sentence. Only those correctly diagnosed and uncomplicated fibroids with menorrhagic disturbances, that is, with increased menstrual bleedings are suitable for x-ray therapy. Those fibroids which consist wholly or overwhelmingly of the interstitial type will comply with these requirements. This therapeutic agent should not be used on tumors of amenorrhagic or metrorrhagic types.

COMMENT

The writer does not wish to say that, at times, border-line cases should not be radiated. Such patients are sometimes radiated with excellent results. The more the strict indications are observed the better will be the percentage of cures. The writer has had four patients with fibroids of mixed types reaching the umbilicus who refused operation, in whom the fibroids shrunk considerably; and five patients with slight inflammatory changes which can be registered as cured. Roentgen-ray therapy, in such cases, should be the exception, not the rule, and the uncertainty of its success should be emphasized.

In such pathologic growths for which, empirically, it is known that not even the slightest degree of improvement may be expected, radiation should never be attempted.

It is important to stress that constitutional or systemic contraindications for surgery in the fibroid patient cannot possibly make the fibroid more eligible for roentgen therapy.

In the writer's opinion the refusal to radiate unsuitable and doubtful fibroid cases will improve

the statistics of cures to almost 100 per cent. In fact, if the indications are right, there are no failures and no untoward results. A competent gynecologist should be responsible for diagnosing the fibroid pathology. The choice of the method of treatment will then be decided upon without difficulty.

TECHNIQUE

A high voltage x-ray apparatus furnishing about 200 kv., and a thorough knowledge of physical and biologic factors, especially erythema and percentage depth dose, are basic requirements.

In order to destroy the generative organs a dose of only 34 per cent is necessary. This castration dose is so small, about one-third of the erythema dose, that no other human tissue can possibly be damaged by it.

This technique represents a great advantage over the massive dose, which renders tissue extremely hard and brittle, making surgical interference, if necessary later, very difficult. In the vast majority of cases, if this light radiation fails, a heavy dose will fail also.

Castration requires, with proper apparatus and technique, little more than two hours, and can be given with one treatment if necessary. The writer prefers, however, to give half a castration dose over each ovary, abdominal and dorsal, on four consecutive days.

EFFECTS

Nausea.—In dividing radiation treatment over a number of days, there is scarcely any discomfort or nausea.

Amenorrhea.—How long it will take before amenorrhea is brought about will depend largely upon the time of intermenstruum, when radiation is given. If treatment took place in the first half, about 60 per cent of the writer's patients would have no more menstruation; but if radiated in the latter half, 95 per cent had one or more bleedings. The explanation of this is that ovulation, causing the following menstruation, takes place about the middle of the intermenstruum. Radiation after ovulation can, therefore, have no effect upon the following menstruation.

Temporary Amenorrhea (Temporary Castration).—By giving about 5 per cent less than the castration dose it is possible, in most cases, to produce a temporary amenorrhea. This is because the immature follicles are less sensitive to radiation. They recover within a few months.

Climacteric Disturbances.—These can readily be controlled with ovarian and pituitary extract. In more severe symptoms calcium intravenously is advisable. It is especially the obese patients who will have more precipitated disturbances. This, however, is not the fault of radiation, but is due to their unbalanced endocrine system (autonomic imbalance). These patients are of hypopituitary and hypothyroid type, with high blood pressure, which makes them especially poor risks for surgery. They always have severe disturbances even

if not treated at all. Short radiation over the pituitary glands, as advocated by the Vienna school, has given me very satisfactory results.

RESULTS

Fifty-nine patients were radiated; forty-four were refused radiation.

Retrogression of Tumors.—In eighteen patients, or 30 per cent, the fibroid shrank totally. In one of these patients a coexisting exophthalmic goiter disappeared after amenorrhea set in.* In twenty-three patients, or 39 per cent, the tumors shrank to more than half their former size. In eleven patients it shrank about one-third its original size. In 5 per cent of patients with fibroids the writer could not notice any diminution, though with the beginning of amenorrhea these patients are feeling well.

Failures.—One rather large fibroid in a patient was shrunk considerably and amenorrhea produced, but adhesions to the omentum made hysterectomy necessary. In another fibroid patient the author could not produce total amenorrhea. Hysterectomy revealed a submucous fibroid near the cervix, besides some small interstitial fibroids. This woman had slight cramp-like pain, and the writer should not have been persuaded to radiate this case.

CONCLUSIONS

1. Roentgen-ray therapy of fibromyomata yields most excellent results in the interstitial and uncomplicated type of fibroids in which the main symptom is excessive monthly bleeding. That group includes about 25 per cent of all fibroids.

2. The fibroid pathology *per se*, uninfluenced by any associated systemic diseases, determines the indication for x-ray therapy.

3. A rather mild radiation, the castration dose, is sufficient to produce an amenorrhea and a cure of the patient.

4. If the diagnosis is correct, success is 100 per cent with no untoward results whatever.

5. Cases of uncertain pathology should preferably receive surgical therapy.

6. The indication should always be made by a competent gynecologist.

1244 Roosevelt Building.

DISCUSSION

FRANK W. LYNCH, M. D. (University of California Hospital, San Francisco).—Doctor Lindenberg, in a well balanced and carefully prepared paper, discusses the indications and contraindications for the roentgen-ray treatment of uterine fibromyoma. He clearly states that not all uterine fibroids demand treatment, and that if treatment is needed that there are at least two methods whose usefulness has been demonstrated, i. e., surgery and the roentgen ray. The third method of treatment, that by radium, is not discussed in the paper.

In spite of the fact that all well-trained men realize the postulates stated above, the fibroid question re-

mains complicated because the medical literature is constantly flooded with papers which urge one form of treatment alone to the exclusion of the others, and which do not give proper statements concerning the complications and disagreeable sequelae of the methods which are so strongly championed. As a result the medical practitioner who does not operate but who does control the patient is confused: he sends her, according to his lights, either to surgeons who only operate, or to roentgenologists whose training in gynecology is too often sketchy and who do not realize that surgery is the method of choice in many cases. Consequently the result of treatments of the entire group of fibroids throughout the country is by no means as good as it should be. Annually there are many unnecessary deaths because men who control their own cases and are attempting to develop themselves as surgeons see surgery as the one and only proper form of treatment. This group of men do not appear to realize that there is an inherent mortality attending surgery for fibroids, as much as 1½ to 2 per cent in any series of considerable size in the leading clinics of the world, and much greater in the hands of less experienced surgeons. On the other hand, there are many women whose condition has not been improved but who have been made miserable for life because of menopausal symptoms which have followed ill-chosen therapy with radium and the roentgen ray. Were the patients the only sufferers the case would be bad enough, but it is worse because a woman suffering from nervous reactions of the menopause does much to impair the efficiency of her husband, to break up the home, and to destroy the morale of her children. This shows, I believe, that the selection of proper treatment for fibroids, i. e., nothing, surgery, radium, and the roentgen ray is often a most important matter. Doctor Lindenberg, by the careful presentation in his paper, has done much to simplify this question. He limits the indication for roentgen ray in the paper under discussion to cases with hemorrhage. His work is well tabulated and shows well-chosen indications for treatment.

Our own experience agrees with Doctor Lindenberg's in nearly all points. He feels that roentgen ray should be considered for therapy in approximately 25 per cent of patients. Hemorrhage was a cardinal symptom in only 35 per cent of 700 fibroid cases of all ages in our series in San Francisco. If we would limit the treatment to women approximately of menopausal age, the percentage would be much smaller, possibly even less than the 25 per cent above stated. We agree with the statements: one, that the roentgen ray does not decrease the tumor by action upon the muscle cells but that it reduces the tumor only by killing the ovarian follicles; two, that the castration dose is the only logical method of roentgen-ray therapy; and, three, that it should not be used on young women, women who wish to bear children, or on women who are of a very nervous type.

His list of specified contraindications for roentgen ray treatment interests us extremely because we also are frequently mistaken in our diagnosis and confuse other conditions for fibroids. In many cases the error in the diagnosis is not extremely important. Yet one must realize that after the roentgen-ray treatment for fibroid the ovaries are killed and do not regenerate again.

We have not had as good results as has the essayist in the treatment of climacteric disturbances with ovarian and pituitary extracts. If we had such we would use roentgen-ray therapy more than we now do. I have given almost a barrel of pituitary and ovarian extract in routine treatment of castrated women, yet our good results are so few that I can almost call them to mind. Many of our patients still have marked vasomotor reactions after several years of treatment with glandular extracts, calcium injections and radiation over the pituitary glands. Nor have we found what type of woman responds to this type of therapy. Patients with high blood pressure do not show in our hands better results from the extract

* This case is dealt with in my article, "Coincidence of Fibroid Tumor and Exophthalmic Goiter with the Report of a Case Cured by X-ray Castration," American Journal of Obstetrics and Gynecology, Vol. xvi, No. 3, p. 425, September, 1928.

treatments than do those with low blood pressure, as was true in Polak's series. While we must admit that most of these women have unbalanced endocrine systems and might have had a stormy climacteric even if they had been left untreated, the sane physician will do as little as is possible to disturb a patient's normal reactions.

The paper should show clearly to all readers: first, that all fibroids do not demand treatment; secondly, that while good results may follow treatment either by surgery, radium, or the roentgen ray, that there are disagreeable sequelae which may attend any one of these types of treatment; and, thirdly, that the treatment of fibroid patients should lie in the hands of physicians who have had actual experience in all these methods of therapy because only such a person can wisely choose a proper treatment.

In conclusion, I wish to congratulate Doctor Lindenberg upon one of the best balanced papers on the roentgen-ray treatment of fibroids that I have recently had the pleasure of reading.

✽

WILLIAM H. SARGENT, M. D. (1624 Franklin Street, Oakland).—There is little to be added except possibly to reemphasize certain points.

It is my impression that radiation is a rather generally accepted method of treating uterine fibroids in a fair percentage of the cases. Its value has been proven to such an extent that it must receive some consideration in almost every case. It is a matter of determining whether it is indicated or not, if the best interests of the patient are to be served.

There are two groups of patients in which radium or the x-ray should receive first consideration. One are the typical cases that all are more or less familiar with, in which hemorrhage is the predominating symptom. The fibroids are small, not larger than a fair-sized orange, interstitial, the pelvis free of other pathology, and the patients well on toward the menopause. Even though good surgical risks, radiation should be the treatment of choice in such cases, since it offers them almost a 100 per cent chance of cure. Radium or the x-ray may be used. However, the former seems preferable.

The other group is made up of those patients in whom hemorrhage is also the predominating symptom but who are not good surgical risks for reasons of anemia or other pathology. Under these conditions radiation ceases to be a competitor of surgery and becomes an aid. It may change a very serious situation into a comparatively simple one in a most gratifying manner. Even though there may be pathology present which would ordinarily be considered unfavorable for radiation, it may be given with reasonable expectation that the hemorrhage will be stopped, or at least controlled, for a time sufficient to get the patient in a more favorable condition for operation.

Pelvic infection is a definite contraindication to the use of radium in this group, but when chronic it is not necessarily a contraindication to the use of the x-ray when it is cautiously used.

Occasionally, after radiation in those patients in whom we may expect a cure, menstruation does not stop completely, or it may stop for a varying length of time, and then recur. The question then arises as to whether surgery or further radiation should be resorted to.

If menstruation does not stop, and yet definite menopausal symptoms develop, surgery is advisable. If there are no menopausal symptoms, further radiation is permissible. Under these conditions a small dose of x-ray will usually suffice. It is not necessary to repeat radium. When a flow occurs after a period of time, and after a definite menopause has been established, it has the same significance as a "flow" after a natural menopause and requires the same consideration. When menstruation is being established the menopausal symptoms disappear or greatly decrease. When such occurs the patient may be kept under observation for a while. Menstruation may

again cease after a few periods without further treatment. If not, further radiation is permissible.

By observing the above, undue radiation of a case that should be operated upon may be avoided; or occasionally the patient may be spared an unnecessary operation.

✽

H. J. ULLMANN, M. D. (Cottage Hospital, Santa Barbara).—We should thank Doctor Lindenberg for his very careful review of the literature and summation of the indications for, and results of, radiation treatment of fibroids.

I cannot agree with Doctor Lindenberg, or the authors quoted, that the effect on fibroids is indirect and due to destructive action on the ovaries. It is true that where x-ray is used there must necessarily be severe injury to the ovaries, but this does not occur with intra-uterine radium applications, provided the dose is kept within reasonable limits. A good illustration of this is the difference in the effect of additional filtration if a moderate amount, such as .5 millimeter of silver is used. An almost immediate sensation of bleeding occurs, followed by rapid shrinking of the tumor, while if 1 millimeter of brass is added to the silver and the time of application increased, the effect on the fibroids themselves is distinctly reduced, while the effect on the ovaries is practically unchanged. If the dose with this filtration is not greater than 1200 milligram element hours there will usually be a return of menstruation within two or three years, provided that the woman is not already approaching her normal menopause. Cases have been reported where pregnancies have occurred some time after such a dose. Under these circumstances, no one, by the widest stretch of the imagination, could call such a dose a "castration dose." We have found very nervous women are frequently benefited by such a radium application, especially when near the menopause, and I have had several referred to me for such treatment by our neurologists, with very gratifying results. I quite agree that a mistake in diagnosis may be disastrous, and no radiologist is expected to treat a patient without having made every effort himself, by personal examination of the patient, to confirm the diagnosis. I believe that there is more danger in radiating a pyosalpinx than Doctor Lindenberg believes. I never radiate a patient with a history of pelvic infection if I can possibly escape doing so. I agree thoroughly with Doctor Lindenberg that a massive dose of x-ray should never be used in the treatment of fibroids. It is absolutely unnecessary, and I do not know that radiologists have ever considered treating fibroids as they would cancer. I was surprised to hear that a massive dose would render tissues more difficult for operative procedures. It is true that overdosage may in some localities, such as the thyroid, produce fibrosis, which increases the difficulty of operation, but I have repeatedly made inquiries of surgeons who had operated on a large number of patients who had received long and intense radiation over the pelvis, and in no case had they ever seen adhesions or abnormalities other than are often found under the same morbid conditions where radiation had never been used. I much prefer the use of radium to x-ray in fibroids for two reasons: first, because it is possible to make examination of the interior of the uterus to rule out carcinoma at the time the radium is applied, and, second, because ovarian function is conserved to a far greater degree than after x-ray.

✽

DOCTOR LINDENBERG (Closing).—The discussion shows clearly the diverse opinions of the radiologist and the gynecologist. For this reason I presented the gynecologist's attitude before the radiological section of our association.

Radium therapy was not within the scope of my discussion. When we consider the efficacy of radium in the treatment of fibroid tumors, we must remember that, in spite of its excellent results, such therapy carries with it a definite mortality. The introduction of

radium into the uterine cavity is, at best, a nonsurgical procedure, especially where its indication is most obvious, in submucous fibroids. The possibility of necrosis and sepsis is beyond the control of the attendant. The mortality in radiotherapy can mostly be attributed to the use of radium in this type of tumor. Since x-ray therapy is absolutely harmless we can understand why a number of gynecologic clinics have discontinued the use of radium in favor of roentgen rays in these benign tumors.

Radiology and surgery are not competitive measures, but supplant each other, depending upon definite indications. The ideal arrangement would require, therefore, that every gynecologist should be equipped to handle his own radiotherapy as he would the knife. Since such facilities are only occasionally at the disposal of the gynecologist his close coöperation with the radiologist will insure the choice of therapeutic procedure of greatest benefit to the patient.

THE CONTROL OF INTRACTABLE PAIN*

REPORT OF CASES

By E. B. TOWNE, M. D.
San Francisco

DISCUSSION by Howard W. Fleming, M. D., San Francisco; Charles D. Lockwood, M. D., Pasadena.

EVERY physician knows, too well, the patient who suffers from the pain of inoperable malignant disease. A cure is impossible, and therapeutic effort must be directed to alleviating the suffering of the remaining months of life. Increasing amounts of morphin give partial relief, but after a time a tolerance for the drug is established, and enormous doses are necessary. The final opium stage is most distressing to all concerned, and it should be avoided if possible. This paper deals with surgical procedures which will abolish or largely diminish the pain of malignant disease in certain portions of the body.

PAIN OF CANCER IN REGION OF TRIGEMINAL NERVE DISTRIBUTION

Cancers of the cheek, lip, anterior two-thirds of the tongue, floor of the mouth and accessory nasal sinuses are within the sensory distribution of the fifth nerve. In all cases which cannot be cured by complete excision, pain becomes, sooner or later, the dominant factor. Moreover, in certain cases which are cured and show no evidence of recurrence, there is distressing pain as a result of involvement of sensory fibres in the scar.

Treatment of these cases is based on the fact that if the involved area is rendered anesthetic, the pain must cease. The methods which are applicable to tic douloureux have proved successful here. Blocking of the superior maxillary or mandibular branches of the nerve with alcohol gives relief for many months, and the procedure may be repeated if necessary. If the nerves cannot be injected because of the location of the cancer, or if the pain is in the ophthalmic branch, permanent relief may be obtained by intracranial division of the sensory root of the fifth nerve. Grant¹ has published his results in thirty-five cases. Alcohol injections were done in twenty-four, with complete relief in seventeen, partial relief in four, and no result in three. In ten cases he could not reach the nerve. In five of these, and

in five others where injection was not attempted, the sensory root was divided with these results: complete relief in six, partial relief in one, no relief in one, one death from septic meningitis and one operative death.

The following case reports illustrate favorable results from these two methods of treatment:

CASE 1.—M. L., a man aged 53, was seen in November, 1925. He had an inoperable carcinoma of the anterior third of the left side of the tongue which involved the floor of the mouth. He complained of constant pain, day and night. The pain was not present with the onset, fourteen months previously, but had started after radium therapy, five months before entry. The mandibular branch of the trigeminus was injected with alcohol at the foramen ovale. Relief was immediate, and when he was last seen, seven months later, anesthesia was still present and he was free from pain. He was very thin and cachectic, and it is probable that he died shortly after that time.

CASE 2.—O. E. O., a man aged 59, was seen in June, 1927. A radical removal of a carcinoma of the left maxillary antrum, including its anterior, superior and medial walls, and most of the malar bone, had been done in November, 1926. Pain had not been an important factor before operation, but afterward it became constant though not very severe. He did not resume his occupation after operation. For three months he had taken morphin in increasing doses, with little relief. The pain was in the ophthalmic and superior maxillary branches. The left eye was blind as the result of glaucoma. The sensory root of the fifth nerve was divided, and the left eye was removed. He was entirely relieved of pain. Five weeks after operation he returned to his work as superintendent of construction. In October, 1927, he had gained forty-three pounds and was working regularly. He said that he had never felt better. There was no evidence of recurrence of the tumor.

PAIN OF CANCER IN REGION OF GLOSSOPHARYNGEAL NERVE DISTRIBUTION

Malignant tumors of the posterior third of the tongue, the tonsils and faucial pillars, the pharynx and the nasopharynx are in the domain of the glossopharyngeal nerve. Dandy² has twice divided this nerve in the posterior fossa for neuralgia, with immediate relief. There was complete anesthesia in the distribution of the nerve. He remarks on the applicability of the procedure to inoperable carcinomas of the tonsil and nasopharynx. I have not yet had occasion to do this, nor is a case recorded.

PAIN IN LEGS AND BODY UP TO NIPPLE LINE

The more important causes of the pain which may be relieved by the operation to be described are: injuries and primary or secondary tumors of the spine, inoperable malignant tumors of the pelvis and lower extremities, and tabes dorsalis. In many cases these pains are extremely severe, and little affected by opiates. Division of posterior nerve roots proved to be unsatisfactory. In 1905, Spiller demonstrated that sensations of pain and temperature are conveyed in the anterolateral columns of the spinal cord. The first division of the anterolateral tract was done on one of Spiller's patients in 1911. In 1920, Frazier³ brought the procedure to general attention by publishing a report of six cases, with complete relief in five and partial relief in one. Since then, many more have been recorded and the operation is now a standardized one which gives

* Read before the General Surgery Section, California Medical Association, at its Fifty-Seventh Annual Session, April 30-May 3, 1928.

almost uniformly good results. There is loss of pain and temperature sensation on the opposite side of the body up to a level about three segments below the segment incised. Motion, reflexes, and all other forms of sensation are unimpaired. The patient is not troubled by loss of pain and temperature sensation because tactile, joint and position sensations are normal. Peet's⁴ results in nineteen cases were: complete relief of original pain in sixteen; partial relief in two, and complete but apparently temporary relief in one. The primary conditions in his series were: carcinoma of the uterus or cervix, nine; carcinoma of the breast, two; sarcoma of the leg, two; carcinoma of the prostate, one; carcinoma of the lung, one; retroperitoneal malignancy, one; pain in the legs associated with spasmodic contractions, one; pain in the legs of unknown origin, one, and traumatic sciatic neuralgia, one.

CASE 3.—M. C. R., a woman aged 49, was seen in February, 1926. She had an inoperable carcinoma of the uterus with pelvic metastases. For five months she had suffered from increasingly severe pain in the lumbar region and down both legs. Very large doses of morphin gave only partial relief. Under nitrous oxide and local anesthesia, a laminectomy was done on the second, third and fourth dorsal vertebrae, and both anterolateral columns were divided to a depth of 3 mm. There was complete loss of pain and temperature sensation up to and including ninth dorsal segment on both sides. Motion, reflexes, and all other forms of sensation were unimpaired. Opiates were discontinued after two weeks. The patient was entirely free from pain until her death in April, 1927, fourteen months after operation.

CASE 4.—M. A., a man aged 27, was seen in August, 1926. Gastric crises of tabes began early in 1924 and the attacks were increasingly prolonged and severe. Thorough antiluetic treatment had given no result. In May, 1926, the fifth to twelfth intercostal nerves on the left side had been divided, without result. Two to three grains of morphin were used each day. A bilateral chordotomy was done on the fifth dorsal segment of the cord in October, 1926, resulting in loss of pain and temperature sensation up to and including the seventh dorsal field on both sides. It was necessary to catheterize the patient for two weeks. Morphin was discontinued after four weeks. The epigastric pain and vomiting did not recur while he was under observation, and his weight increased twenty-eight pounds. In January, 1927, three months after operation, the patient was deported to Mexico and it has been impossible to get any further information.

Comment.—Case 3 is a typical example of a condition which is practically always relieved by the operation of chordotomy. In such cases the pain must be conveyed up the anterolateral columns, and division of the columns should abolish it. There is a difference of opinion as to how the pains of tabes are transmitted to the brain, and here the operation of chordotomy is not on a sound basis. However, Leighton has reported complete relief in two cases, and partial in one; therefore, the attempt seemed justified in Case 4. It is regrettable that the final result will not be known, but the patient was well satisfied with the three months period of freedom from pain.

SUMMARY

Intractable pain, usually due to inoperable cancer, which condemns the patient to an opium existence, may be relieved by certain surgical

procedures when located in some portions of the body. When the lesion is within the distribution of the trigeminal nerve, the involved branch should be injected with alcohol, or the sensory root should be divided. Cases illustrating good results from these two methods are reported in this paper. When the lesion is within the distribution of the glossopharyngeal nerve, the pain should be relieved by division of the nerve in the posterior fossa. This operation has been used only for glossopharyngeal neuralgia, but the resulting anesthetics indicate that it is applicable to the pain of malignant disease. Finally, pain below the nipple line may be abolished by division of the anterolateral columns of the spinal cord. This operation makes the transmission of sensations of pain and temperature impossible. It is applicable to a large variety of cases, of which the most important are injuries of the spine, inoperable primary or metastatic tumors of the spine, and inoperable tumors of the pelvis and lower extremities. A favorable result in one such case is reported here, and also an apparently good result in a case of gastric crises, in which the anatomical basis for the operation is questionable.

350 Post Street.

REFERENCES

1. Grant, Francis C.: Relief for the Pain in Carcinoma of the Face, *J. A. M. A.* 86: 173 (Jan. 16) 1926.
2. Dandy, W. E.: Glossopharyngeal Neuralgia (Tic Douloureux); Its Diagnosis and Treatment. *Arch. Surg.* 15: 198 (Aug.) 1927.
3. Frazier, C. H.: Section of the Anterolateral Columns of the Spinal Cord for the Relief of Pain, *Arch., Neurol. & Psychiat.* 4: 137 (Nov.) 1920.
4. Peet, M. M.: The Control of Intractable Pain in the Lumbar Region, Pelvis and Lower Extremities by Section of the Anterolateral Columns of the Spinal Cord (Chordotomy), *Arch. Surg.* 13: 153 (Aug.) 1926.

DISCUSSION

HOWARD W. FLEMING, M.D. (384 Post Street, San Francisco).—Doctor Towne's paper on intractable pain emphasizes a most important subject. All too frequently physicians lose interest after the diagnosis of an incurable malady is made. The plight of such patients is most discouraging and distressing. The feeling of utter futility often makes us neglectful. Morphin is the usual course of treatment, and is far from satisfactory.

Doctor Towne's paper enumerates several surgical measures that have proven worth while in affording relief of pain. Any patient whose expectancy of life is three months or longer deserves the relief of pain which such palliative operation can give. My experience with these operations described by Doctor Towne leads me to indorse heartily all he has said about this important subject.

✽

CHARLES D. LOCKWOOD, M.D. (65 North Madison Avenue, Pasadena).—Surgeons too often lose interest in their patients when they find postoperatively that they have failed to relieve the trouble for which they have operated or find that their patient is suffering from an incurable disease. Doctor Towne's paper should stimulate us all to undertake further measures of relief for the sole purpose of rendering life more tolerable even for a short time to those suffering from intolerable pain.

My own experience in this field has been limited to pain in the distribution of the trigeminal nerve, the result of malignant tumor of the brain and due to trifacial neuralgia. Here deep injections of alcohol will give relief for many months and section of the sensory root of the fifth nerve will give permanent relief. I have also been able to relieve pain in the sciatic nerve, associated with carcinoma of the pros-

tate, by alcohol injections into the sensory root of the sacral plexus.

I would not hesitate to expose the spinal cord and do a chordotomy, as suggested by Spiller, Leighton and others.

BRAIN TUMOR*

ITS PRESENTING SYMPTOMS

By CYRIL B. COURVILLE, M. D.
Loma Linda

DISCUSSION by Carl W. Rand, M. D., Los Angeles; E. B. Towne, M. D., San Francisco.

CONTRARY to the general opinion, brain tumors are common lesions. This fact alone is enough to stimulate our interest in them. It has been shown that in the larger general hospitals that from 0.2 to 0.8 of one per cent of the cases coming to necropsy have tumors of the brain. Dowman¹ taking the most conservative figures, estimates that of the 115,000,000 inhabitants of the United States, 230,000 will be victims of this lesion. If this number be divided by fifty, which is the average age of the generation, there will be 4600 cases each year. This is indeed an impressive figure when we compare it with even some of the more common lesions with which we come into contact in daily practice.

PESSIMISTIC VIEWPOINT CONCERNING BRAIN TUMORS

One disconcerting factor has been the lack of more definite conceptions regarding the pathologic nature as well as the clinical manifestations of the lesion. In a general way, tumors of the brain have been regarded as inoperable lesions having an uninterrupted downward course leading to a fatal ending. Recent researches by Bailey and Cushing² indicate that many of the gliomas are slow growing and consequently are amenable to surgical attack. Tumors having their origin from the bony vault and the meninges offer even a better prognosis. In view of this we must alter many of our older opinions and recognize that, with the exception of metastatic growths, many intracranial tumors are essentially benign lesions and that early removal will result in a cure of the patient.

Another influence, acting unconsciously perhaps, which has prevented the discovery of these cases, is the idea held by many that most of these patients are victims of attempted surgery and would live longer without it. If this be the case the accurate detection and localization of the lesion is of no practical value. Surgery has in times past been attended with a high mortality, not necessarily because the tumor is impossible of removal, but rather due to the patient's weakened condition and the size of the lesion at a late stage of the disease when treatment has been instituted as a last resort. It is not unreasonable to believe that, just as has been the case with abdominal surgery, the present generation will see a progressive decrease in the mortality of operations on the brain. Technical difficulties in cranial procedures will always make the surgical risk greater than

that associated with the simpler operations of the abdomen.

DIAGNOSIS

The diagnosis of brain tumor is usually possible and in many cases not difficult. This, however, does not correspond with the general experience in the past. As Cushing³ has said, "A tabulation of the various diagnoses made in the early stages of a series of brain tumor cases would make a professionally disconcerting record." The essential reason why this state of affairs has existed is that the physician has failed to include a new growth involving the intracranial space in the list of possibilities when a given symptom has brought the patient to his office. A careful study of the presenting symptoms of these cases should, in most instances, make one suspicious of intracranial pathology. A neurological examination with the aid of the roentgen ray, especially after air has been injected into the ventricles, usually makes possible a positive diagnosis of the presence and location of the tumor.⁴

THE PRESENTING SYMPTOMS OF BRAIN TUMOR

If, then, brain tumors are common, sometimes curable, and usually discernible, is it not advisable to look well into their presenting symptomatology? Let us review the complaints which frequently bring these patients to the physician, not attempting to discuss the more technical aspects which are of interest only to the neurologist.

PRESSURE SYMPTOMS

Headache.—This notoriously protean symptom is one of the most common manifestations of brain tumor. Its association with manifold simple conditions tends to disarm the observer and to lead him to attribute its presence to an apparent condition in the upper respiratory passages, the eyes, or other and more distant troubles. For this reason the nature of its etiology is not suspected until an advanced stage of the disease in many instances.

The headaches of brain tumor cases are variable. They may be but slight until late in the disease, or may be of great intensity almost from the onset. They are often described as bursting in character, the patient feeling as though the head were going to split. An agonizing headache which tends to recur day after day should arouse the suspicions of the attending physicians that its cause is organic.

If it is worse in the morning, or upon change of position, and if accompanied at the height of the attack by vomiting, it is not infrequently due to an intracranial new growth. The location of the headaches is not always characteristic and often is misleading. It is probably due to a stretching of the dura incident to local or general increase in pressure.⁵ It is commonly fronto-occipital due to the focusing of converging lines of pressure in these regions.⁶ It may be referred likewise to the opposite side of the head and is due to a transmission of the pressure.

Vomiting.—Projectile vomiting, usually described as a feature in the intracranial pressure syndrome, is absent in perhaps two-thirds of

*From the Neurological Service, Loma Linda Sanitarium and Hospital.

*Read before the San Bernardino County Medical Society on May 8, 1928.

the cases. It is most frequent in tumors situated in the posterior fossa and occurs usually at the height of the accompanying headache. It may be associated with a definite sensation of nausea, but usually has no relation to food intake. It is perhaps of more consequence to emphasize the fact that vomiting associated with tumor symptoms is not necessarily projectile. A patient was brought to this institution about a year ago with vomiting as the presenting symptom. Food poisoning was suspected by the attendant physician. The patient died a few days after admission and necropsy revealed multiple melanotic tumors of the brain. Recurrent vomiting associated with headache, having no relation to meals or unaccompanied by abdominal distress, should indicate an investigation of the central nervous system. Many children having cerebellar tumors are carried along with the diagnosis of recurrent vomiting, pyloric stenosis, or intestinal disturbance of other types, and not a few have had negative abdominal explorations.⁷

Vertigo.—Dizziness is a fairly common and yet poorly understood symptom. Its causes, like that of headache, are manifold. The dizziness of intracranial tumor is not characteristic, except in its tendency to be persistent and progressive. It may be characterized by the definite sense of rotation of surrounding objects, as found frequently with posterior fossa tumors, or by irregular and indefinite sensations of unsteadiness on the feet. In the latter instance it is frequently due to choked labyrinth, which corresponds to a choked disk.⁸ Persistent dizziness, especially in young adults, in the absence of definite middle ear disease demands careful investigation, for it is suggestive of pathology within the cranial cavity.

MENTAL SYMPTOMS

The occurrence of mental aberrations as symptoms of brain tumors is well known. The fact that many mental cases have brain tumors, however, is not so well understood. It has been estimated by Blackburn⁹ that about 2 per cent of all cases of insane patients that come to autopsy have tumors of the brain. Mental symptoms are not indicative of frontal lobe lesions necessarily, but may accompany tumors in adjacent areas, involving the higher psychical centers secondarily, or as a part of the symptom complex of massive gliomas undergoing degeneration, probably a toxic psychosis. Severe headaches themselves often result in a slowing of the mental processes and minor character changes.

Delusions and hallucinations play an important rôle in the mental changes in frontal lobe tumors, although they may occur as isolated symptoms of disturbances of other lobes. Auditory hallucinations usually considered as evidence of a definite psychosis have been shown to be a symptom of temporal lobe tumors, when unaccompanied by mental changes. Cases which present mental phenomena with other symptoms suggestive of an increase of intracranial pressure as headache or vomiting, should be investigated for an organic brain disorder. If a routine neurological examination could be done in all these cases, especially a study of the eyegrounds, without doubt many

cases of brain tumor would be isolated from the ever growing list of the insane.

OPTIC SYMPTOMS

A large percentage of cases of intracranial tumors at some time in the course of their illness have had glasses fitted in an attempt to relieve the visual disturbances present. It is not at all strange then that the oculist should be the first to see many of these cases and, if doing scientific work, can direct many of them to proper individuals for help. Failing vision, double vision, or visual hallucinations are often early symptoms.¹⁰ They are extremely suggestive in the young. Every individual with visual disturbances should be examined by one trained in this branch of medicine, and the investigation should include visual acuity, perimetry, and a study of the fundi with the ophthalmoscope. Tumors of the pituitary region, whether the adenoma of the adult, or the cranio-pharyngeal pouch cyst of the child, frequently show early failure of vision with optic atrophy, often with characteristic changes in the perimetric fields. These changes may vary from a segmental or a quadrantal defect to a complete bitemporal hemianopsia. Tumors of the temporal and occipital lobes if within the hemisphere are prone to compress or destroy the optic path resulting in homonymous hemianopsia. Visual hallucinations of form have been shown to be an accompaniment of temporal or frontal lobe tumors, in the latter instance it being a part of a psychosis.¹¹ Hallucinations of light, such as flashes, streaks, and zigzag effects, are often observed by patients having lesions of the occipital lobes.

AUDITORY SYMPTOMS

Symptoms indicating disturbance of hearing are so frequent and accompanying such a large variety of lesions that it is not at all strange that their association with brain tumors is often not considered. Even as a tumor symptom the manifestations are so protean as to be confusing. Tinnitus, in the form of a buzzing, ringing, or roaring in the ears, impairment or loss of hearing, or auditory hallucinations may be present. None of these can be considered as diagnostic of tumors of the auditory pathway *per se*, and therefore must be considered in the light of other findings in the case. Such phenomena may be evidence of pressure involving the end organ, irritation or compression of the acoustic nerve, or interference of the central pathways or of the cerebral cortex. Auditory hallucinations unaccompanied by evidence of a psychosis are very suggestive of temporal lobe involvement.¹² The subjective syndrome of tinnitus, progressive deafness in one ear, vertigo, numbness of the homolateral side of the face, with headache and vomiting, is pathognomonic of a cerebellopontine angle tumor.¹³ Bilateral deafness due to a cortical lesion is extremely rare, although such a case has been recently reported.¹⁴ It occurs more frequently with tumors involving the corpora quadrigemina.

MOTOR SYMPTOMS

Motor phenomena associated with tumors encroaching upon the intracranial space may be irritative or compressive. The irritative symptoms

are manifested commonly as convulsions of a general or local (Jacksonian) nature. It has been estimated that approximately a third of these cases have seizures in some form during their course.¹⁵ Many had been diagnosed as idiopathic or essential epilepsy and were so treated for years. Later other symptoms and signs were added which suggested the organic basis of their etiology. This fact is not without significance. Are we justified in the face of such evidence to pronounce all cases presenting generalized convulsions as being epileptic without a careful study? It is true that they may present no neurological signs at the time of examination, but the patient should be encouraged to return to the physician at periodic intervals for observation, or whenever the case presents a new or altered phenomenon. This program would without doubt be a valuable factor in the earlier diagnosis in cases of brain tumor.

Jacksonian convulsions, with their definiteness as to manifestation and their value as a localizing element, are relatively frequent. We cannot assert that every case presenting this type of motor disturbance has a brain tumor, for to do so would fail to recognize many other types of focal pathology. If convulsions of a single extremity should occur a complete examination will usually reveal other signs to establish a pathologic diagnosis. With a reasonable suspicion, ventricular puncture with injection of air may help confirm or rule out the presence of a new growth.

Motor disturbances in the nature of hemiparesis or a complete hemiplegia may be present. In the first instance, motor weakness usually indicated a compression of the motor area by a neighborhood lesion. Meningiomas (dural endothelioma) arising from the falx cerebri compressing the upper motor area, are usually accompanied by a weakness in the lower extremity of the opposite side. This one sign, together with an increase in the vascularity of the cranial vault as shown by the roentgenogram will strengthen the diagnosis of a meningioma in this location.¹⁶ Complete paralysis of one extremity of the upper motor neuron type, especially with a slow onset, should be regarded as suspicious of a tumor in the motor area. Without doubt many cases of hemiplegia are due to tumors which have been attributed to a cerebral hemorrhage. In a necropsy some months ago we found a metastatic tumor in the left cerebral hemisphere of an aged male patient whose condition had previously been diagnosed as a cerebral hemorrhage. A primary (entirely unsuspected) growth was found in the lung. It is never safe to presuppose the etiology of abnormalities of motor function of central origin. A careful review of the history is helpful as it usually suggests the etiology. A neurological examination will usually indicate the presence or absence of an expansive intracranial lesion.

SENSORY SYMPTOMS

While not marked and characteristic as in lesions of the spinal cord, subjective sensory phenomena may be an integral part of the brain tumor syndrome, especially if the growth is located

in or adjacent to the sensory pathway. Paresis and anesthesia associated with motor phenomena in a single member or in one side of the body are suggestive, although one must be careful to rule out the dissociation of sensation as found in hysteria. Usually a careful objective study will make the nature of the condition clear. Jacksonian seizures are often preceded by sensory auras in the form of numbness, formications, flashes of hot or cold, or shooting or aching pains. Lesions in the sensory cortex may give rise to "sensory fits" independent of any motor disturbances. Thalamic lesions, associated with deep-seated aching pains, are often the result of cerebral hemorrhage although they may occur with tumors. Astereognosis, indicative of parietal lobe pathology, is often manifested first by failure of the patient to recognize coins in his pocket with one hand. Loss of deep sensibility is usually described as "losing" the arm or leg in space so that the patient is at a loss to know of its position. Perhaps in no other series of symptoms is it so important to analyze the history and characteristics so carefully as in this, and to verify impressions gained by painstaking and repeated examinations.

SUMMARY AND CONCLUSIONS

Common complaints may be and frequently are presenting symptoms of brain tumor. These lesions are far more common than usually supposed, and they demand that the family physician be on the alert so as not to overlook them. Every suspicious symptom should be carefully investigated and a neurologic study made in those cases in which intracranial pathology is suspected. The outlook for brain surgery today is the same as that of abdominal surgery a few decades ago. Its success depends upon an early diagnosis and properly applied surgical methods. Its future depends upon both the surgeon and the family physician, for it is to the latter that the patient first comes for help. A correct suspicion properly followed out surgically will at least relieve the distressing headache, save the eyesight, and in many cases prolong the patient's life in relative comfort.

Loma Linda.

REFERENCES

1. Dowman, C. E.: Discussion of paper by Ernest Sachs, Present-day Status of the Surgery of Brain Tumors, *South. Med. Journ.*, xx, 171-78.
2. Bailey, Percival; and Cushing, Harvey: Tumors of the Glioma Group, Philadelphia. J. B. Lippincott Company, pp. 104-65, 1926.
3. Cushing, Harvey: Some Aspects of the Pathological Physiology of Intracranial Tumors, *Boston M. and S. J.*, clxi, 71-72, July 1909.
4. Dandy, W. E.: Localization of Brain Tumors by Injection of Air into the Ventricles, *J. Missouri M. A.*, xxi, 329, October 1924.
5. Cushing, Harvey: The Sensory Distribution of the Fifth Cranial Nerve, *Bull. Johns Hopkins Hospital*, xv, 223, July-August 1904.
6. Courville, Cyril: A Study in the Pathological Physiology of Intracranial Neoplasms—The Principle of Transmission of Pressure in the Production of Symptoms, *California and West. Med.*, xxix, 4, July 1928.
7. Cushing, Harvey; and Bailey, Percival: Medulloblastoma Cerebelli—A Common Type of Midcere-

bellar Glioma of Childhood, *Arch. Neurol. & Psychiat.*, xiv, 192-224, August 1925.

8. Alexander, Gustav: The Choked Labyrinth and Its Importance for the Diagnosis and Indications in Brain Tumor, *Surg. Gynec. & Obst.*, xlvi, 381, March 1928.

9. Blackburn, I. W.: Intracranial Tumors Among the Insane, Washington, D. C., Government Printing Office, 1903.

10. Horrax, Gilbert: Visual Hallucinations as a Cerebral Localizing Phenomenon, *Arch. Neurol. & Psychiat.*, x, 532-45, November 1923.

11. Cushing, Harvey: The Field Defects Produced by Temporal Lobe Lesions, *Brain*, xlv, 341-396, 1921.

12. Courville, Cyril: Auditory Hallucinations Provoked by Intracranial Tumors, *J. Nerv. & Ment. Dis.*, lxxvii, 265-74, March 1928.

13. Cushing, Harvey: Tumors of the Nervus Acousticus, Philadelphia. W. B. Saunders Company, p. 176, 1917.

14. Bramwell, E.: Case of Cortical Deafness, *Brain*, L, 579-80, October 1927.

15. Sargeant, P.: Some Observations on Epilepsy. Vasomotor Activity in Brain and Epilepsy, *Brain*, xlv, 312, November 1921.

16. Sosman, Merrill C., and Putnam, Tracy J.: Roentgenological Aspects of Brain Tumors—Meningiomas, *Am. J. Roentgenol.*, xiii, 4, January 1925.

DISCUSSION

CARL W. RAND, M. D. (1023 Pacific Mutual Building, Los Angeles).—It is opportune that Doctor Courville has emphasized the relative frequency of brain tumors at this time. There is little doubt that these lesions are more common than has been generally supposed. Indeed there is no reason why the brain should not be the seat of tumors as frequently as any other organ. This is probably the case. The principal reason why these lesions have been considered rare is because many existing cases have not been recognized.

Perhaps our experience in the neurosurgical service at the Los Angeles General Hospital will bear this out. The service was established approximately eight years ago. At that time it was seldom that we saw a brain tumor, possibly a half-dozen examples coming to our attention during the first year. The number of cases has gradually increased. Two years ago a resident was provided for the service. He had free access to the medical and surgical cases in the house, as well as the opportunity of visiting the outpatient clinic for the purpose of picking out any possible cases of brain tumor. The results were gratifying. Last year approximately thirty-five brain tumor cases were treated on the neurosurgical service.

Our experience at the General Hospital should serve as a fair index of what may be expected in the practice of medicine taken in its larger sense, if physicians would be more on the outlook for cases of brain tumor. Persistent headache, focal convulsions or those appearing late in life, visual disturbances such as double vision or contraction of the fields, gradual failure of vision, ringing in one ear followed by approaching deafness, instability in walking, dizziness, gradually increasing weakness of one or more extremities, sensory disturbances, or some other sign may act as the presenting symptom in a case of brain tumor. Methods of investigation have improved to such an extent that in a majority of cases the presence of a brain tumor should be diagnosed even if its position is not exactly known. Moreover, its localization and character should be determined in an increasing number of cases and a fair estimate should be given in advance as to how much can be done surgically in each particular case.

Newer methods of attack have increased the number of tumors which can be entirely or partially removed, and consequently the period of life in patients suffering from these lesions has been gradually increased. It is the purpose of Doctor Courville's paper, I take it, to present briefly the cardinal symptoms of brain

tumor so that we may be more on the alert for these not infrequent lesions.

✱

E. B. TOWNE, M. D., (350 Post Street, San Francisco).—Doctor Courville's paper gives an excellent summary of the leading symptoms of tumor of the brain. It is obviously impossible, when dealing with such a complex organ, to include all the possible early manifestations. The diagnosis of tumor of the brain is frequently easy, but this is usually in advanced cases. However, a great deal depends on the location of the tumor. One that gives Jacksonian epilepsy and hemiparesis, for instance, can hardly be mistaken, but many frontal lobe tumors grow to large size before the true situation is suspected. The most important thing is for the physician always to have in mind the possibility of tumor of the brain when dealing with any obscure condition pointing to the intracranial cavity. It is now possible to make the diagnosis and the localization in nearly every case. Visualization of the ventricular system by the method introduced by Dandy in 1918 has been largely responsible for this marked improvement in the situation. It must not be forgotten that the earlier the diagnosis can be made the better the patient's chances are if the tumor is of a character which permits removal.

THE SELECTION OF DIURETICS*

By LEONARD G. ROWNTREE, M. D.

Rochester, Minnesota

THE use of diuretics dates back to antiquity, for dropsy has been known since before the dawn of medical history. One Babylonian tablet earlier than 6000 B. C. records a case of dropsy for the "instruction of sufferers." Cases were recorded by the Father of Medicine in the Golden Age of Pericles, and Galen in Rome's imperial day disputed with Asclepiades concerning the mechanism of the origin of ascites. Sydenham, the father of modern clinical medicine, wrote a treatise on dropsy in Pepys' day, that for medical wisdom will serve as a model for all time. Innumerable workers have since written on the subject, but I feel that I can do no better in approaching it than to quote some of the statements of this wisest and greatest of English clinicians. He discussed the indications in dropsy for purgatives, emetics and diuretics. After describing his success in the treatment of his first and most marked case of dropsy, he proceeded as follows:

"In the confidence of youth and inexperience I fancied that I had now a sovereign remedy for dropsies; one that would subdue all alike. A few weeks undeceived me. I was then called in to a female patient who labored under a dropsy that had supervened on a quartan ague. I prescribed the syrup; repeated it; exasperated the disease. After a time, as the water remained the same, the purging continued, and the tumor increased, the lady changed my services for those of another physician, who, after my dismissal, gave her more appropriate remedies and cured her accordingly."

In discussing the subject of diuretics it is necessary to take into consideration (1) the function of the kidney, (2) the mechanism of the

* From the Division of Medicine, The Mayo Clinic, and The Mayo Foundation, Rochester, Minn.

* Fourth Annual Clinic lecture of the Scripps Metabolic Clinic, delivered before the San Diego County Medical Society, at La Jolla, January 7, 1929

secretion of urine, (3) the nature of the action of diuretics, and (4) the nature of the disease and of the accompanying injury to the kidney.

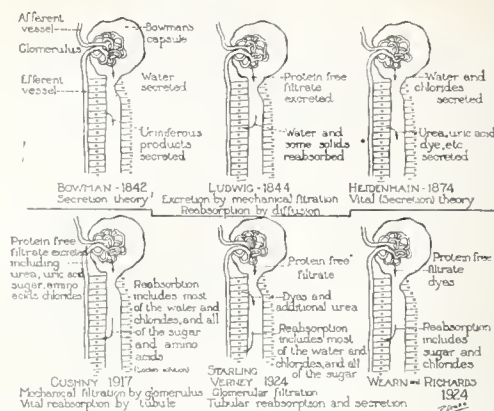


Fig. 1.—Schematic presentation of various theories of urinary secretion (Hench).

These matters are essential for the best selection of a diuretic for the individual case.

THE FUNCTION OF THE KIDNEY

The function of the kidney is to separate from the blood substances carried to it for excretion and to pass these substances out of the body as urine. The purpose behind urinary secretion is the important consideration; that is, to keep constant the volume and composition of the blood

TABLE 1.—*Volume and Composition of Blood and Urine*

	Blood plasma	Urine	
	Volume, cc. for each kilogram of body weight (approximately)	Volume, c.c. in 24 hours	Ratio of concentration in blood and urine
Average	50	1400	
Maximum	60	2400	
Minimum	40	800	
Composition			
Water	90 to 93	95	
Proteins, fats	7 to 9		
Glucose	0.1		
Sodium	0.3	0.35	1
Chlorid	0.37	0.6	2
Urea	0.03	2.0	60
Uric acid	0.004	0.05	12
Potassium	0.020	0.15	7
Ammonium	0.001 (?)	0.04	40
Calcium	0.008	0.015	2
Magnesium	0.0025	0.006	2
Phosphate	0.009	0.15	16
Sulphate	0.002	0.18	90
Creatinin	0.001 (?)	0.075	75

TABLE 2.—*Water Balance (DuBois)*

Water intake (daily):	Gm.
Drinking water.....	300
In coffee, milk and soup.....	580
In solid foods.....	720
From oxidation of 100 gm. of protein.....	41
From oxidation of 100 gm. of fat.....	118
From oxidation of 244 gm. of carbohydrate.....	135
Total	1894
Water output (daily):	
In urine.....	750
In feces.....	300
Vaporized through skin and respiratory tract.....	700
Total	1750
Plus balance to body.....	144
Gain in body weight.....	100

and to purge the body of waste, superfluous, noxious and foreign substances. This involves: (1) excretion of water, in excess of bodily needs and in volume sufficient to keep the solids of the urine in solution; (2) excretion of salts, the cations and anions both being important; (3) excretion of certain end products of metabolism such as urea and creatinin; (4) excretion of certain foreign material such as drugs and dyes, and (5) synthesis, as exemplified in hippuric acid.

THE MECHANISM OF URINARY SECRETION

The three principal theories of urinary secretion are those of Ludwig, of Bowman and Heidenhain, and of Cushny. Hench has shown these schematically in a very ingenious manner (Fig. 1). Although these ideas are merely theoretic, Cushny himself stated that most of the work of recent years strongly supports his theory. The illuminating experiments of Richards and Wearne prove by chemical analysis the presence of sugar and salt in the urine, as it is found in Bowman's capsule. Reabsorption, at least of glucose, therefore, must occur normally.

Cushny also has introduced into the physiology of urinary secretion the conception of threshold and nonthreshold bodies. This is a consideration of real significance. Those with a high threshold, glucose, sodium, chlorids, bicarbonates and amino acids, are excreted only when present in the plasma in concentrations in excess of the normal level. Phosphates, sulphates, creatinin, and certain drugs such as iodids are always excreted in the urine irrespective of the level in the plasma. For certain other products, such as urea, urates and potassium, the evidence is not entirely clear.

The main constituents of the urine, a comparison of their concentration in the blood and urine and the concentrating capacity of the kidney are shown in Table 1, taken from Cushny. To this I have added figures showing normal fluctuations in the volume of the plasma and of the urine. The composition of the plasma is maintained within narrow limits whereas the volume and composition of the urine is variable, fluctuating to balance the intake of water and food.

The balance of the daily output to the daily intake is effected for many substances. The water

TABLE 3.—Approximate Daily Output of the Kidney

Water, c.c.	Solids, output		Acid		Base	
	Organic	Inorganic	c.c. 1/10 N		c.c. 1/10 N	
1200 to 1500	38.2 gm.	22.7 gm.	2548		2368	
	Urea 32.0	Sodium chlorid 14.0	Phosphorus 925		Calcium 365	
	Creatinin 1.8	Phosphoric acid 2.0	Chlorin 810		Magnesium 283	
	Uric acid 0.7	Sulphuric acid 2.6	Sulphur 813		Potassium 870	
	Ammonia 0.7	Potassium oxid 3.0			Sodium 850	
	Hippuric acid 0.8	Magnesium and calcium oxid 0.9				
	Residual organic 2.2	Residual inorganic 0.2				

balance is fairly well understood and is illustrated in Table 2, from DuBois. In clinical practice the water intake usually is measured or calculated as represented in water and beverages and the output as represented in urine and feces, leaving out of consideration the water taken in solid foods, the water of oxidation, and the water lost through the skin and respiratory system. Fortunately, these elements which usually are left out of consideration practically offset each other; therefore the results of the rough measurements are approximately correct, and are of considerable clinical value.

The work accomplished by the kidney can be better appreciated if visualized in terms of daily average (Table 3).

There are certain significant considerations in urinary secretion which can be suggested in three short paragraphs.

The function of the glomeruli is to filter deproteinized plasma. This can be expressed by the formula $F=P-p$, in which F =filtration, P =blood pressure in glomeruli and p =pressure

of urine in tubule. The osmotic pressure of proteins in the blood is 25 to 39 mm. of mercury. Below this pressure no urine is secreted. Blood pressure is an important consideration, since pressure factors influence filtration.

The function of the tubules is seen in the reabsorption of Locke's solution. The tubules are said to excrete urates in birds with ligated ureters. They are said to excrete certain dyes (Marshall's evidence in *Lophius piscatorius*). They also are said to excrete salts foreign to the organism, such as iodids. The Nussbaum experiment indicates active secretion on the part of the tubules. Phenolsulphonaphthalein seems to be concentrated in tubules but secretion may take place in them.

General considerations that must be kept in mind are as follows: Diuretics may bring additional glomeruli into action; blood flow through the kidneys is excessive in diuresis (Krogh), four to nineteen times its share by weight; there is a local vasomotor mechanism controlling blood supply and secretion of urine; stimulation of the

TABLE 4.—Various Types of Diuretics

Diuretic	How and by whom introduced	Mechanism of diuresis	Indication	Comment
Water	Common experience	Unknown; probably increased water in the blood	Oliguria in absence of edema	Many theories; increase in output only with excessive intake
Hypertonic sodium chlorid	Common experience	Reduced protein content and increased water content	Anhydremic states; toxemia	Cations and anions both important: potassium, calcium, ammonium, nitrate, chlorate, acetate
Sugar	Said to be result of milk and grape cures	Tissue dehydration	Acute toxemia	Used mostly in oliguria
Urea	Friedrich, 1892	Osmotic effects	Edema in absence of uremia	Good effects
Digitalis	Empirically; Withering	Improvement in circulation	Cardiac dropsy	May be helpful in renal forms of edema, especially in the aged
Caffein and euphyllin	From beverages; Von Schroeder	Improvement in circulation. Stimulation of cells of renal tubules	Cardiac and other forms of edema	Many derivatives
Calcium chlorid	Schultz; Blum	Formation of acid	All forms of edema	Too great gastro-intestinal irritation
Ammonium chlorid and ammonium nitrate	Experimentation Haldane Gamble Keith	Formation of acid and of urea Effect on tissues	All forms of edema in absence of uremia	Generally useful; urea and carbon dioxid combining capacity
Merbaphen	Diuretic effect long recognized Wagner and Saxl and Heilig	Effect on tissues Formation of acid Renal irritant	All forms of edema except acute nephritis	Excellent diuretics; used at intervals only

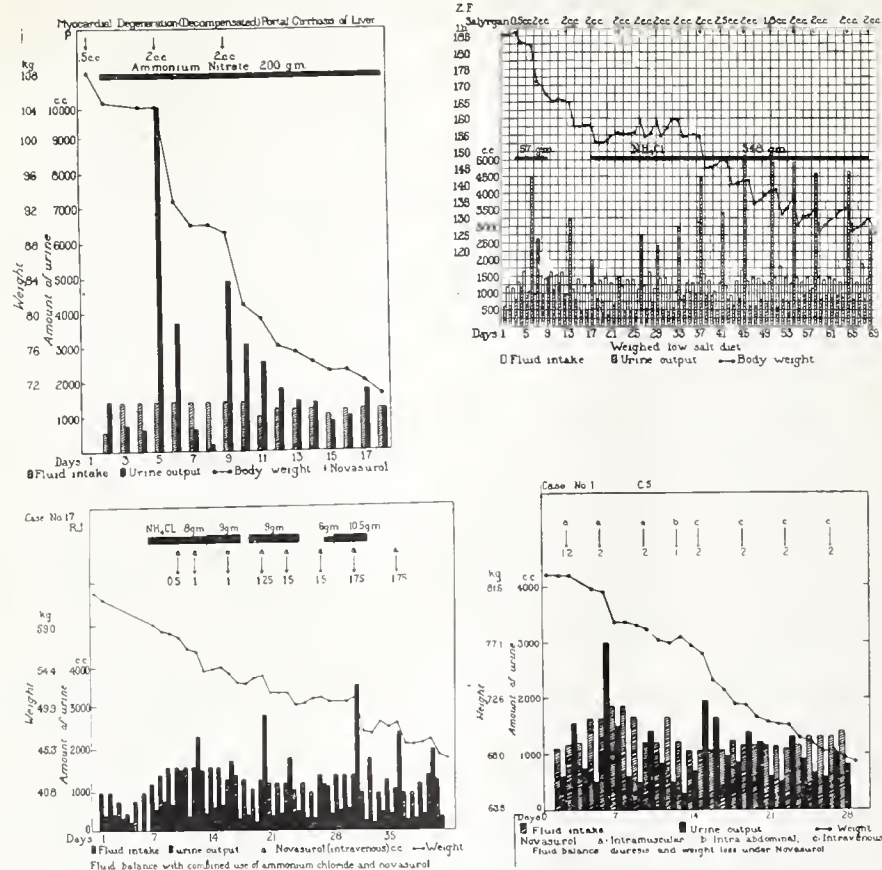


Fig. 2.—Diuretic effect of merbaphen in nephrosis, myocardial insufficiency, cirrhosis of the liver and polyserositis.

splanchnic nerves causes cessation of glomerular flow (Bieter).

THE USE OF DIURETICS

A list of the various diuretics, together with their actions and indications for use, is given in Table 4. A discussion of diuretics leads naturally to a consideration of edema and uremia.

Certain diuretics are of great value in certain forms of edema and not of much value in other types. For instance, digitalis is of great value in the dropsy of cardiac origin and has a relatively slight effect in ascites of cirrhosis of the liver or nephrosis. On the other hand, merbaphen is of great value in many types of edema. Figure 2 shows that it is equally effective in nephrosis, myocardial insufficiency, cirrhosis of the liver and polyserositis. It cannot be used safely, however, in acute nephritis and acute infections of the

kidney. The ammonium salts likewise can be administered in many forms of edema. Their use may be questioned in the presence of uremia or in the presence of an increase of urea in the blood. Ammonium chlorid occasionally induces acidosis and ammonium nitrate occasionally induces cyanosis due to methemoglobinemia. In my experience these never have proved of serious consequence. Merbaphen occasionally induces diarrhea which is sometimes hemorrhagic in character and which may precipitate hematuria in the presence of acute pathologic processes. Occasionally also purpura may develop following its use. I have not noted, however, any serious injury from the use of merbaphen.

Calcium chlorid is of value but is used infrequently now because of its irritant action on the gastro-intestinal tract and the fact that the same results can be obtained with ammonium salts with

less irritation. The striking effect on the urinary output and on the body weight is shown in column 4 in Figure 3. This did not come, however, until after paracentesis.

In combining edema of all types, a salt-free diet is often a most important consideration. Table 5 shows that it is possible to construct diets that are adequate from a calorie point of view but extremely low in the content of sodium and of chlorin.

NATURE OF THE DISEASE AND OF THE INJURY TO THE KIDNEY

In considering various diuretics, the various types of diseases for which these drugs are used must be taken into account. The diseases may

TABLE 5.—Salt-Free Diets Used in Nephritis and Nephrosis with Edema

Diet Number	Composition, gm.						
	Carbo-hydrate	Protein	Fat	Calcium	Water	Sodium	Chlorid
1	190	40	65	1500	1300	1.15	1.60
2	150	40	80	1500	800	0.50	0.70
3	235	50	145	2500	900	0.77	0.88
4	300	60	120	2500	930	0.70	0.90
5	350	70	85	2500	850	0.68	0.85
6	345	80	90	2500	950	0.67	0.75
7	320	90	95	2500	860	0.65	0.78
8	275	100	110	2500	920	0.75	0.80

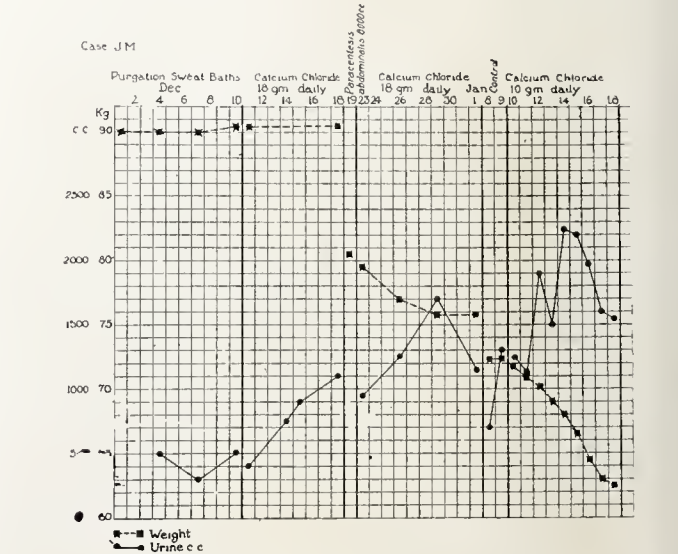


Fig. 3.—Effect of calcium chlorid on the urinary output and body weight in a case of nephritis.

TABLE 6.—Changes in the Blood in a Case of Duodenal Intoxication Following Gastro-Enterostomy

Date, 1923	Various constituents of serum, mg. for each 100 c.c.					Various constitu- ents of plasma, mg. for each 100 c.c.		Blood urea, mg. for each 100 c.c.	Intake		Output
	Sodium	Potassium	Calcium	Magnesium	Phosphorus	Chlorid	Carbon dioxid combin- ing power, by volume		Sodium chlorid, gm.	Water, c.c.	Urine, c.c.
11-11	336					271	109	282	12.6	3800	Anuria*
11-12	336	15.8	8.0	3.7		350	86	316	20.3	4400	700
11-13	304	13.0	8.4	2.8	9.0	384	77	297		2400	1970
11-14						420	70	288	10.0	3125	2200
11-15									6.5	3000	2500
11-16						485	66	190	12.0	2500	2840
11-17									8.0	3510	3245
11-18									10.0	3580	2990
11-19	350	13.6	9.3	2.7		570	52	86	10.0	3840	3370
11-20	371								3.0	3540	3570
11-21		16.3	9.2	2.6		615	50	54			3000
11-22											2900
11-23											2600
11-24											2200
11-25											
11-26	368	16.5	9.1	2.7	2.1	605	55	27			
Normal values	335	20.5	10.5	2.0	2 to 3	585	65	25			

* Emesis 1560 cc.

be grouped as (1) those in which there is nitrogen retention only (hypertrophy of the prostate gland, polycystic kidney and certain forms of toxemia); (2) those in which edema is associated with secondary renal changes (nephrosis and cardiac dropsy); (3) those in which nitrogen retention is associated with edema and primary renal changes (acute, subacute and chronic nephritis and infections of the kidney), and (4) those in which there is edema of extrarenal origin (cirrhosis of the liver, Banti's disease and polyserositis).

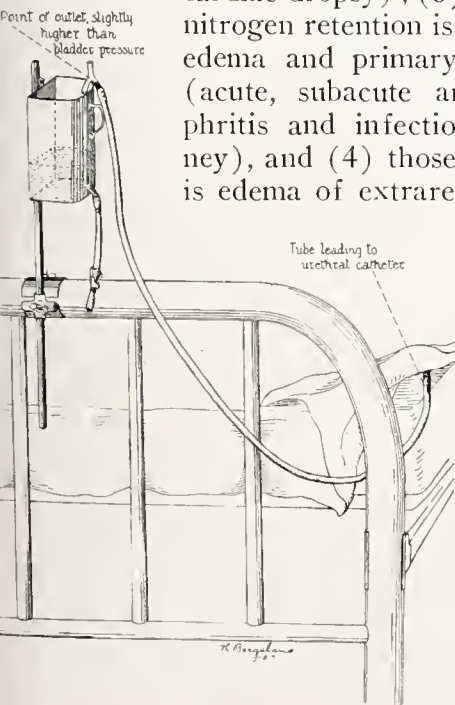


Fig. 4.—Apparatus for gradual decompression of distended bladder (Von Zwahlenburg).

NITROGEN RETENTION
Hypertrophy of the Prostate Gland and Polycystic Kidney.—In obstruction of the lower part of the urinary tract resulting from hypertrophy of the

prostate gland there is retention of urine and distention of the bladder, and later the accumulation of an excess of urea and creatinin in the blood. This condition, if uncomplicated, is rarely associated with edema. In the treatment of hypertrophy of the prostate gland, the most important considerations are: (1) the forcing of water, (2) the gradual decompression of the distended bladder, (3) the restriction of proteins, (4) the temporary or permanent removal of the obstruction (cystostomy or prostatectomy), and (5) care of infection. In hypertrophy of the prostate gland and in polycystic kidney the forcing of water is often the most significant therapeutic consideration. The importance of gradual de-

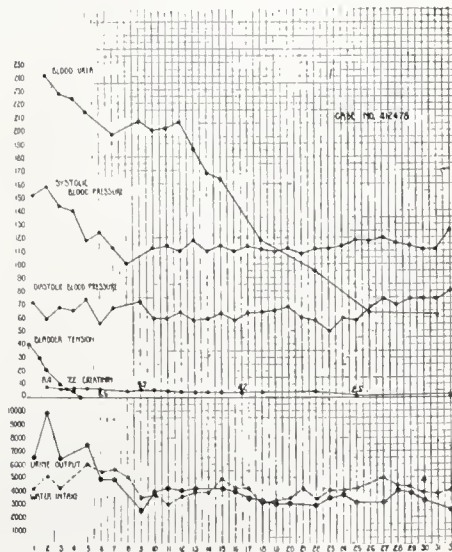


Fig. 5.—Time consumed in lowering of tension of the bladder and decrease in blood urea and blood pressure (Bumpus and Foulds).

TABLE 7.—Loss of Weight by Use of Sugars; Dehydration Period

Sugar	Dog	Loss of body weight		Loss of urine		Temperature change, o C., rectal
		Kg.	Per cent	Body weight, per cent	C.c. for each kg.	
Saccharose	1	0.9 1.1	8.57 10.6	9.3 10.7	93 107	39.3 to 38.9 38.8 to 38.9
	2	2.15	12.6	10.5	105	38.9 to 38.8
	3	1.3	14.0	10.5	105	39.8 to 39.2
	4	0.9	9.2	9.4	94	39.4 to 40.2
	5	0.9	9.3	9.7	97	39.6 to 39.1
	6	1.4	12.7	9.6	96	38.9 to 38.4
	7	1.68	11.5	10.0	100	39.4 to 40.1
	8	1.2	11.2	9.6	96	38.8 to 39.6
	9	1.3	11.4	8.9	89	38.8 to 39.0
	Average		11.1	9.8	98	Maximal rise 0.8
Glucose	10	1.4	10.6	7.0	70	38.8 to 39.3
	11	1.6	11.9	7.0	70	38.1 to 39.6
	12	1.5	11.2	7.7	77	39.2 to 40.1
	13	1.3	11.2	9.6	96	38.8 to 39.8
	Average		11.2	7.8	78	Maximal rise 1.5

compression should also be emphasized. This may be accomplished by the simple apparatus (Fig. 4) developed by Doctor Von Zwahlenburg. The remarkable diuresis and the effect on the blood urea and on blood pressure is shown in Figure 5.

Certain Types of Toxemia.—There are many types of toxemia in which the administration of water alone or of water with salt and glucose may prove life-saving. Acute toxic nephrosis subsequent to operation is not infrequently encountered. Figure 6 graphically portrays the course of events in such a case. Following operation the output of urine decreased and the blood urea rose. Fluids were forced with a marked decrease in the level of the blood urea, but with development of moderate edema. This, however, was readily overcome by the use of euphyllin and a salt-free diet.

Pressure factors are often involved in the precipitation of toxemia. Thus the sudden release of pressure in a distended urinary system results often in a profuse urinary output for a few hours, followed by oliguria and uremia. The

administration of salt and glucose intravenously then may be indicated. Exactly analogous toxemia often results from the sudden relief of pressure in a distended biliary system. This is shown in Figure 7. The blood urea mounted rapidly following operation from a normal level to 150 mg. for each 100 c.c. Following the intravenous administration of 1 liter of 10 per cent solution of glucose the level of the urea rapidly became lower as the jaundice cleared.

Another striking example is found in toxemia accompanying high intestinal obstruction. As was shown independently by Haden and Orr and by Brown, Eusterman, Hartman and Rowntree, this is associated with a high level of blood urea, a low level of blood chlorid and frequently by alkalosis. During the last five years numerous cases of this type of toxemia have been treated by the intravenous administration of water, salt and glucose, which acts almost as a specific. In Table 6 is given the record of a case reported by McVicar in which the toxemia yielded steadily and progressively to this form of treatment.

Another type of toxemia that demands diuretics is found in Addison's disease. The course of events in one such case is presented in Figure 8. At first the oliguria was overcome by the administration of large quantities of solution

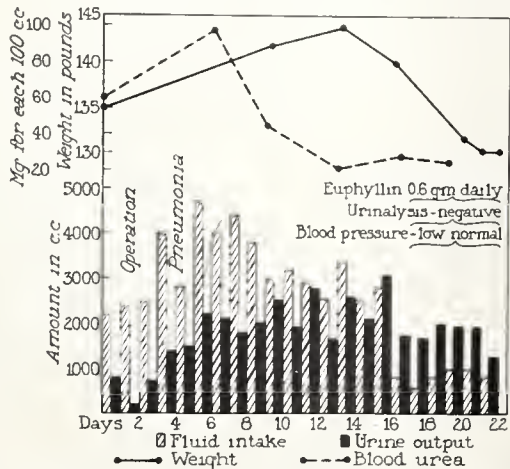


Fig. 6.—Results of treatment in a case of toxic nephrosis following operation (Bannick and Keith).

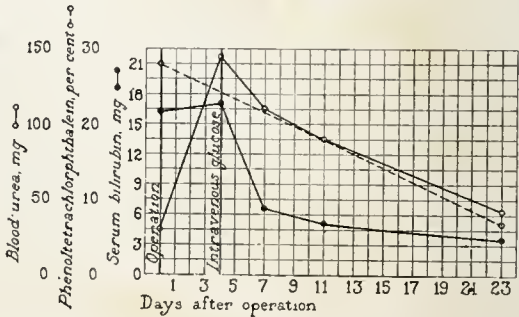


Fig. 7.—Effect of intravenous administration in combating acute toxemia resulting from surgical relief of pressure in a distended biliary system.

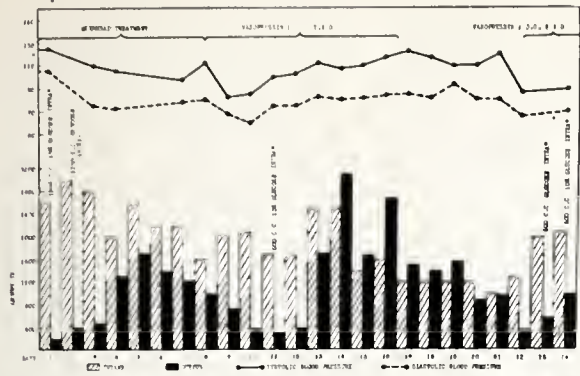


Fig. 8.—Treatment in a case of toxemia in Addison's disease.

of glucose intravenously used in combination with the Muirhead regimen. Subsequently the blood pressure became low and oliguria was present. Glucose was again given together with pitressin (vasopressin).^{*} Pitressin used in diabetes insipidus for its antidiuretic effect, seemed to act definitely as a diuretic in this case of Addison's disease. After it was discontinued oliguria recurred

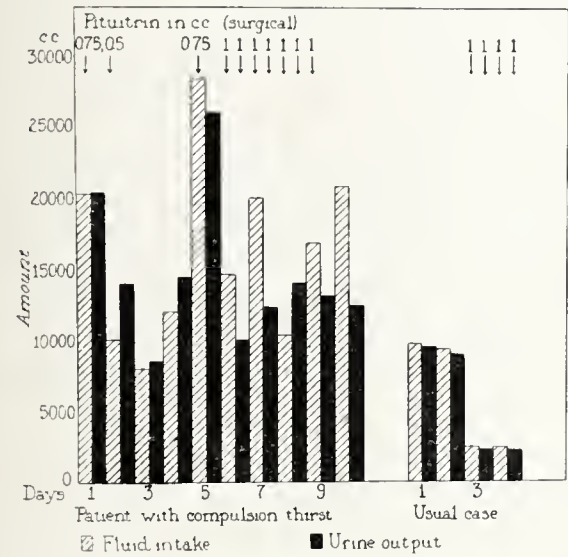


Fig. 9.—Effect of pituitrin in diabetes insipidus.

and was overcome a second time with pitoxcin and glucose.

Water intoxication bears an interesting relation to the excessive use of water as a diuretic. In forcing water the question might be asked as to whether this constitutes a danger. Edema develops at times and water intoxication may also

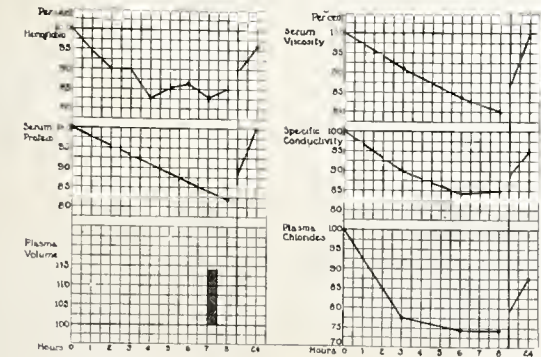


Fig. 10.—Changes in blood following administration of water.

^{*} Studies with recently isolated pituitary extracts. Proceedings Staff Meetings, Mayo Clinic, 1928, iii, 229.

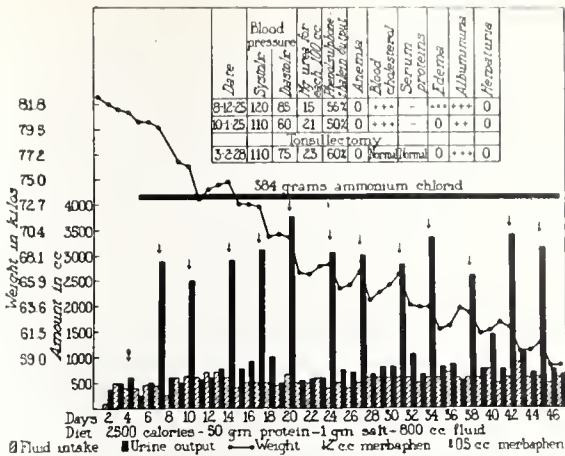


Fig. 11.—Effect of ammonium chlorid and merbaphen in a case of nephrosis with edema (Bannick and Keith).

occur. This condition was first recognized by Weir, Larson and Rowntree in connection with diabetes insipidus. Figure 9 shows the excessive intake and output in a case of diabetes insipidus with compulsion thirst and the effect of the subcutaneous administration of pituitrin in this and in the usual case. This is of peculiar interest as

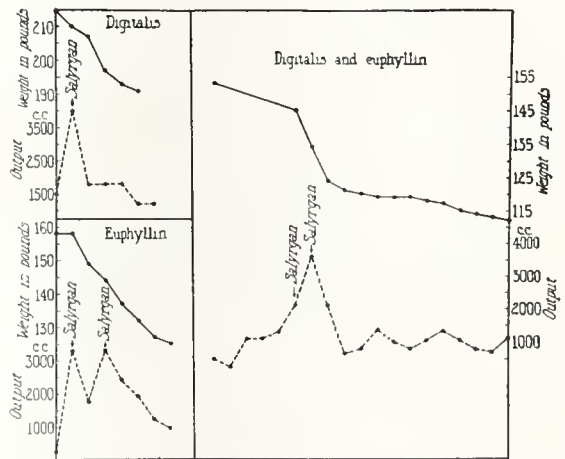


Fig. 12.—Effect of treatment in three cases of myocardial insufficiency.

the case was complicated by epileptiform convulsions which were thought to be induced by excessive intake of water. Since then another patient has manifested similar symptoms under excessive intake of water.

In the study of water intoxication, Greene and Rowntree have shown that there is a possibility of diluting blood through excessive intake of water. The extent to which dilution occurs as determined by measurements is shown in Figure 10. Under these conditions the plasma increased approximately 15 per cent. The content of salt in the plasma was decreased much more markedly than is indicated by the dilution. This was found to be a factor in the production of water intoxication.

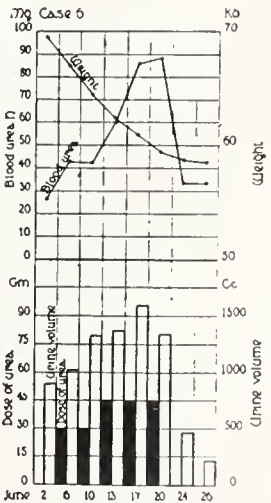


Fig. 13.—Diuretic effect of urea (Crawford and McIntosh).

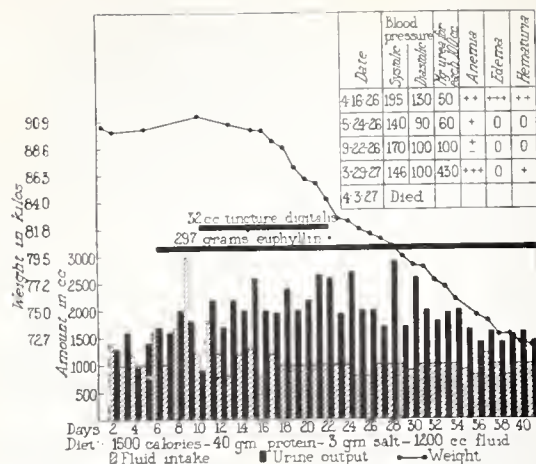


Fig. 14.—Treatment with digitalis and euphyllin in a case of nephritis with edema and uremia (Bannick and Keith).

In contrast to the dilution of plasma, Keith has demonstrated the extent to which dehydration can be affected through the use of sugar (Table 7). Through the intravenous administration of hypertonic solution of sugar he reduced the weight of dogs to the extent of 11 per cent or more, without any significant effect on the temperature of the animal.

EDEMA ASSOCIATED WITH RENAL CHANGES

Nephrosis.—This disease usually is associated with edema and albuminuria. It was formerly included in the condition known as chronic parenchymatous nephritis. The changes in the kidney, however, are degenerative, not inflammatory, and hence this disease was called nephrosis by Müller. Aschoff and others have raised the question as to whether this is a disease of the kidney or a general disease in which the kidney participates.

In addition to albuminuria and edema there is decrease in the proteins of the blood and increase in the values for lipoids and for globulin in the plasma. Hypertension and other cardiovascular changes commonly observed in nephritis are lacking in pure nephrosis, and recovery is relatively common. Mixed forms, as described by Volhard and Fahr, with some features of glomerular nephritis, are common. These usually progress and eventually may present the typical picture and termination of glomerular nephritis.

The edema in nephrosis has been, as a rule, difficult to control. Much better results are now being obtained with the newer diuretics. Merbaphen was first used as a diuretic in cardiac dropsy by Saxl and Heilig, in Wenkebach's clinic in Vienna. The administration of ammonium chlorid by mouth in combination with the intravenous use of merbaphen, a method introduced by Keith, has given excellent results in the treatment of nephrosis. The results in one of these cases is shown in Figure 11.

The statement frequently has been made that control of the edema does not constitute cure. This, of course, is obvious. Yet, from the standpoint of both the patient and the physician the control of the edema is a definite triumph. Al-

though albuminuria persists the patients are able to be up and about and are rehabilitated to a considerable extent. Exacerbations occur from time to time, but a large proportion of these patients recover eventually.

Other forms of treatment have been advocated, of course, in nephrosis. Epstein has advised a diet high in protein and low in fat, and good results have been obtained on this regimen by several workers. I believe, however, that the low level of protein, although important, is not the sole factor in the causation and persistence of the edema, since induced or spontaneous diuresis has been observed at times without any demonstrable change in the protein content of the blood. Restriction of salt and water obviously is important. Thyroid extract also has been advocated by Epinger and later by Epstein. It is given in doses of about 1 to 4 gm. a day. I have not found this a very satisfactory form of treatment, and it does not compare in results with that in which ammonium salts and merbaphen are used. Urea has been employed with success in some cases at The Mayo Clinic, especially in the treatment of children.

Myocardial Insufficiency; Chronic Passive Congestion.—As myocardial insufficiency progresses, edema is frequently established, at first the dependent parts are affected, later the abdominal and pleural cavities are involved and the condition often ends in general anasarca. The circulation becomes more and more embarrassed and the function of all the viscera becomes more and more faulty. Along with the other organs, the kidneys fail. In the later stages retention of nitrogen may appear, with increase in the level of the blood urea. In pure passive congestion of the kidney, however, blood urea values of more than 50 to 100 mg. are extremely rare. The most important consideration is reestablishment of circulation. In this connection derivatives of digitalis and caffein are most useful. Rest and restriction of water and salt also are indicated. Urea, merbaphen and ammonium salts are valuable in treatment. Figure 12 shows the results in three cases. The first patient was treated with digitalis, with the addition of one dose of salyrgan. Part 2 of Figure 12 shows the effect, in another case, of treatment with euphyllin and the addition of two doses of salyrgan. In the third part is shown the effect of treat-

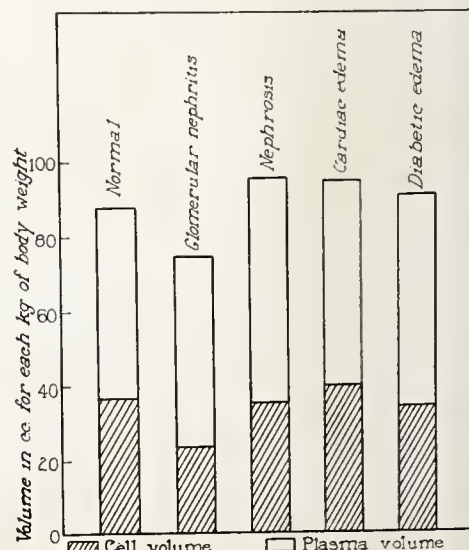


Fig. 15.—Volume of blood plasma and cells in various edema states.

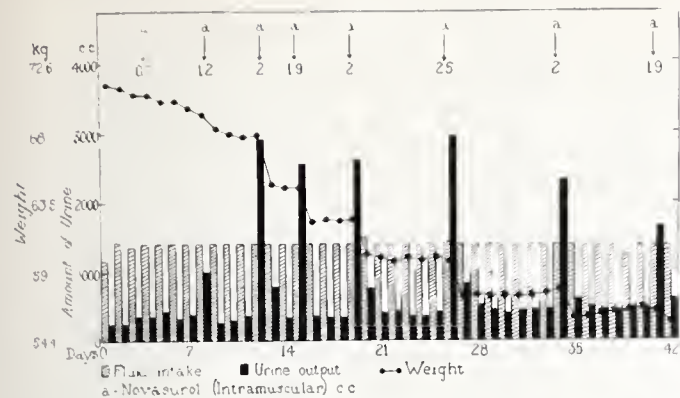


Fig. 16.—Fluid balance, diuresis and loss of weight under merbaphen in a case of Banti's disease with cirrhosis of the liver.

ment of a case with digitalis and euphyllin with the addition of two doses of salyrgan.

In the edema of myocardial insufficiency, urea is very effective as a diuretic. The nature of the results with doses of 60 to 90 gm. each day is shown in Figure 13. It has been advocated recently by Crawford and McIntosh. They have asked the simple question: Why is urea not used more frequently? The fear of uremia is, in all probability, the answer. As physicians, we associate the high level of blood urea with uremia and consequently have an unwarranted prejudice against the use of this valuable agent.

COMBINED NITROGEN RETENTION AND EDEMA

A combination of edema and uremia frequently is encountered in acute, subacute and chronic nephritis and infections of the kidneys. In acute nephritis emphasis should be laid on absolute rest in bed, restriction of activity, control of diet and maintenance of warmth. Diuretics may be necessary. If used at all, purin derivatives and hyper-tonic solutions of sugar are perhaps best. Foci, such as infections in the tonsils or sinuses, may demand attention. In acute, subacute and chronic cases euphyllin is often of decided value, and in older persons digitalis may prove helpful. The effect of such a regimen is depicted in Figure 14. The question is often raised as to which should receive chief consideration, the edema or the retention of nitrogen. This of course depends on the individual case, but as a working rule I have felt that in many instances the accumulation of urea should be controlled even at the expense of inducing edema. This edema can be dealt with subsequently by diuretics or by posture. In some instances it is necessary to place the patient in a jackknife position with the head and feet high, thus allowing the fluid to accumulate within the abdominal cavity, where it can be removed readily by paracentesis.

In former days, edema was ascribed to hydremic plethora. Glomerular nephritis is not accompanied, as is ordinarily thought, by hydremic plethora but rather by a small volume of blood and a normal volume of plasma (Fig. 15). Nephrosis, on the other hand, is accompanied by a slightly increased blood volume with definite increase in plasma volume. Cardiac dropsy shows slightly increased blood volume with, in many

instances, increases in the cell volume. Diabetic edema is accompanied by plasma volume and blood volume which are essentially normal. This would seem to indicate that the plasma does not play an active rôle, but is rather a passive witness of the conflict between the tissues and the kidney.

EDEMA DUE TO EXTRARENAL FACTORS

Recently considerable progress has been made in the control of ascites in cirrhosis of the liver, Banti's disease and polyserositis, through the use of merbaphen and ammonium salts. When Rowntree, Keith and Barrier first employed merbaphen for this purpose we were influenced by the European literature which seemed to indicate that its use in the presence of disease of the liver was fraught with danger. However, when due care is used, the results are gratifying in the extreme. Figure 16 indicates the results obtained in the first case of Banti's disease with cirrhosis. The patient recovered, but died about four years later of hemorrhage from esophageal varices.

The problems of treatment in cirrhosis of the liver are unusually well exemplified in Figure 17, which shows the results of treatment in the same patient at several admissions. On the first visit, excellent diuresis was obtained through the use of merbaphen. On the second admission ammonium chloride was used in addition to merbaphen, with excellent results. His condition on the third admission was not charted because he was suffering from anemia due to hemorrhage and required transfusions only. On the fourth admission the edema was not a striking problem. Three injections of merbaphen and the use of ammonium chloride readily caused its disappearance, but two transfusions also were given. On the last visit, edema was not marked, but he did not respond to merbaphen, ammonium chlorid or hydrochloric acid. Three transfusions were given. The patient died a year later of anemia and inanition. The real problem now in the treatment of cirrhosis of the liver is hemorrhage. In the majority of cases, ascites can be controlled with relative ease. In thirteen of the first twenty-six cases observed in The Mayo Clinic in which edema was satisfactorily controlled, death occurred within three years from esophageal hemorrhages. Prevention of varices in the esophagus and the attending hemorrhage

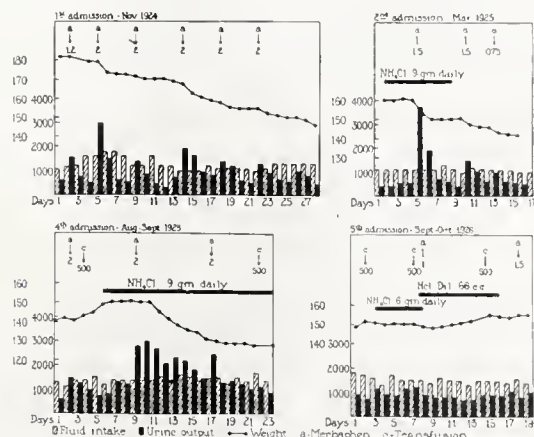


Fig. 17.—Results of treatment with merbaphen in six cases of polyserositis (Snell).

would appear to be a mechanical surgical problem involving control of the left coronary vein leading to the esophagus. It demands surgical consideration.

Ascites and anasarca often constitute the most difficult problems in polyserositis. In the majority of instances, immediate results can be obtained through the use of merbaphen and ammonium salts. The results of treatments with merbaphen in a series of six cases were reviewed by Snell (Fig. 18). In the subsequent control, under conditions at home, ammonium chlorid or ammonium nitrate may prove of value.

With the advent of the new diuretics a better selection than formerly is offered and better results are being obtained than ever before. There is still room for much progress in the treatment of edema. This progress may come through channels other than the administration of drugs such as are now in use. Some of the possibilities which have been suggested are denervation of the kidney by section of the lesser splanchnic nerves and stripping of the renal vessels, and the development of an active diuretic substance from the hypophysis or from the mammillary bodies. In this connection it may be noted that Bourquin has recently found it possible to get an extract from the mammillary bodies of dogs suffering from experimental diabetes insipidus which markedly increased the urinary output when injected into normal dogs.

COMMENT

I have discussed the most important diuretics and the various pathologic states in which they are indicated. But that is only the beginning. In practice, as we all know, each patient must be considered individually and each case of edema represents a distinct problem. I close, as I began, with a statement of Sydenham's with which I am sure all are agreed:

"The chief weakness of medicine is not our ignorance as to the ways and means by which certain indications may be satisfied, but our ignorance of the particular indications that thus want satisfying. How I can make a patient vomit,

and how I can purge or sweat him, are matters which a druggist's shopboy can tell me off-hand. He can tell me, too, how to cool a man when he is heated. When, however, I must use one sort of medicine in preference to another, requires an informant of a different kind, a man who has no little practice in the arena of his profession."

The Mayo Clinic, Rochester, Minn.

CORONARY ARTERY DISEASE*

WITH REPORT OF CASES

By ROBERT WILLIAM LANGLEY, M. D.

Los Angeles

DISCUSSION by Harry Spiro, M. D., San Francisco; Franklin R. Nuzum, M. D., Santa Barbara; Eugene S. Kilgore, M. D., San Francisco.

INCREASING interest in the study of coronary artery disease during the last twenty years has led to more accurate diagnosis and to the early recognition of cases. The electrocardiograph has been particularly helpful in ruling out "acute indigestion," gall-bladder disease, and other vague abdominal pains. One is now able to cast a better prognosis and possibly prolong a patient's life by more accurate observation.

The cases given below represent a definite group of individuals who have survived attacks of acute occlusion of smaller branches of the coronary arterial system.

REPORT OF CASES

CASE 1.—Male, age sixty-six. On April 2, 1927, this patient was taken ill suddenly with a severe knife-like pain in the chest which was entirely substernal. The man felt as if he were going to die. He began to perspire and thinks he lost consciousness. He was a business man who had led a sedentary life for years and whose habits were moderate. On questioning him it was found that he had never had any serious illnesses that he could remember, and his only complaint had been a slight increased shortness of breath on unusual exertion during the last year.

The patient was examined in his office within one-half hour of the onset, and the pain relieved completely after a hypodermic injection of one-quarter grain of morphin sulphate. There was considerable pallor and cyanosis of the lips and ears, and perspiration was profuse. The pulse was 40 and the blood pressure, 146/90. No murmurs were heard and the heart was not enlarged to palpation. The patient was taken to the hospital immediately and an electrocardiogram made. The tracing revealed inversion of the T wave in Leads II and III, incomplete A-V block with migration of the pace-maker (Figure 1a). During this time the patient was in an orthopneic position constantly. Three grains of caffein sodium-benzoate was given every three hours during the day and, when necessary, at night. Morphin sulphate grains one-sixth was given twice. No digitalis was used. At the end of this period another tracing was made which indicated that the pace-maker had become stabilized. The T wave inversion was still present, showing a greater suggestion of the coronary arching as described by Pardee (Fig 1b). Several letters from the patient indicate that he has had slight precordial constriction on a few occasions during the last ten months, but has been otherwise perfectly well.

CASE 2.—Male, age sixty-one. In December 1926, the patient was referred by his son, a doctor, for an electrocardiogram. The tracing was without significant features in any lead and a report of a normal

* Read before the Innominate Society of Los Angeles, February 8, 1928.

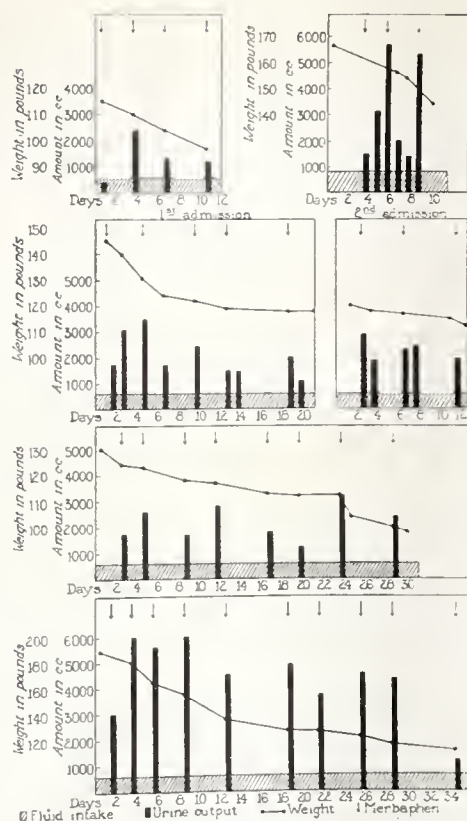


Fig. 18.—Results of treatment on four admissions of a patient with cirrhosis of the liver.

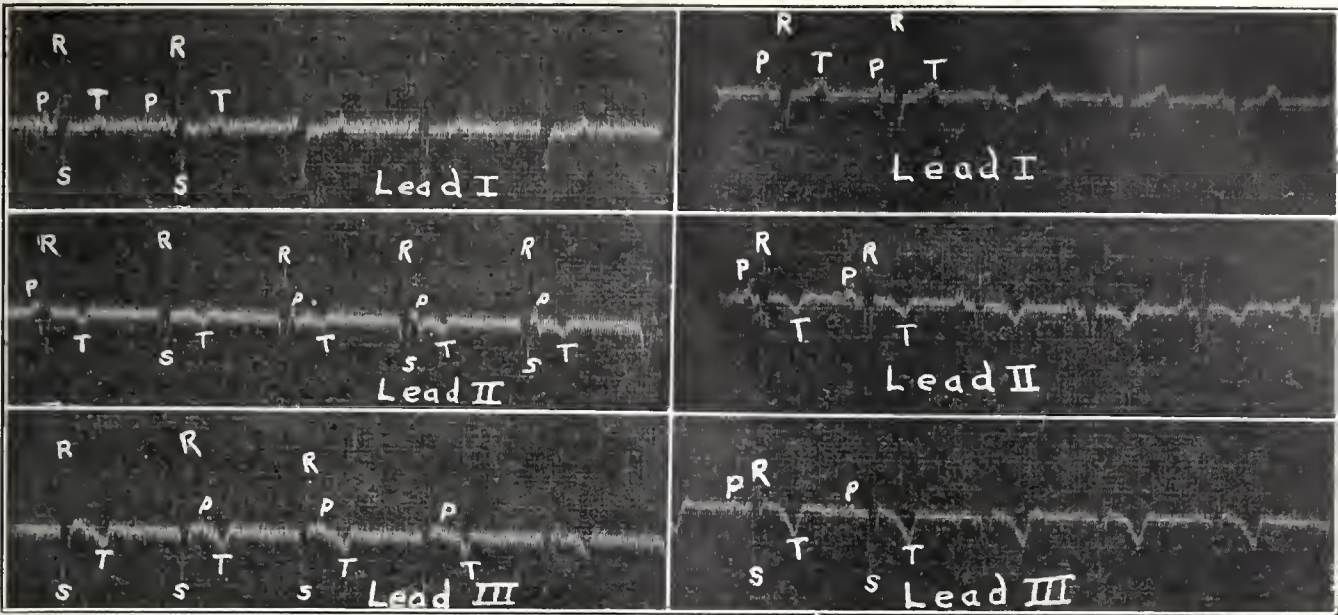


Fig. 1a (Case 1)

Fig. 1b (Case 1)

tracing was returned. The patient was a man who had always been in good health except for occasional attacks of what he referred to as indigestion. There had been no attacks of precordial pain but frequent attacks of pain on the right side below the diaphragm, and some other evidences of gall-bladder inflammation. In April 1926, there was an attack slightly more severe than at any previous time and again in July 1926, during which time there was some precordial pain. In August an attack became so severe that it left no doubt that the pain was cardiac in origin. He was taken to the hospital and an electrocardiogram showed a decided inversion of the T wave in all three leads and a high grade incomplete A-V block (Fig. 2b). Two months of absolute rest in bed was carried out, with the patient in the orthopneic position. Caffein was given routinely and morphin grains one-quarter on two occasions. During two months there was no recurrence of pain in the chest and the patient felt quite well except for occasional attacks of palpitation. On examination the blood pressure was 130/90, pulse 78, temperature 101, and the white blood count 14,500. Another electrocardiogram taken at the end of two months showed a restoration of the normal P-R interval, inversion of the P waves, but the T wave had become positive again in all leads (Fig. 2c). Frequent observation of the patient during the last two months reveals occasional

slight attacks of abdominal discomfort, and a history of mild atonic colitis with belching of gas.

CASE 3.—Female, age sixty-six. On the eve of April 2, 1927, the patient was seized with a sharp stabbing pain in the chest which continued during most of the night. She was seen at 7 a. m. the following morning, and during examination suddenly felt that she was dying. She lost consciousness, became pale as in death, had a convulsion, became pulseless and apparently was dead.

A hypodermic injection of 20 minims of adrenalin was given intravenously, but probably before it had time to act the patient became conscious again and the pulse became perceptible. The heart action was increased in force and the rate quickly rose to 100 per minute. The patient was removed to a hospital, where the electrocardiogram showed a high grade incomplete heart block with inversion of the T wave in all three leads. The coronary arching was particularly well shown in the second and third leads, associated with left ventricular preponderance and severe myocardial damage (Fig. 3a). On physical examination the blood pressure was 100/90, temperature 99 to 100 during the first week, pulse 40, and white blood count 16,400.

This patient was kept at absolute rest in the orthopneic position for two weeks and the usual treat-

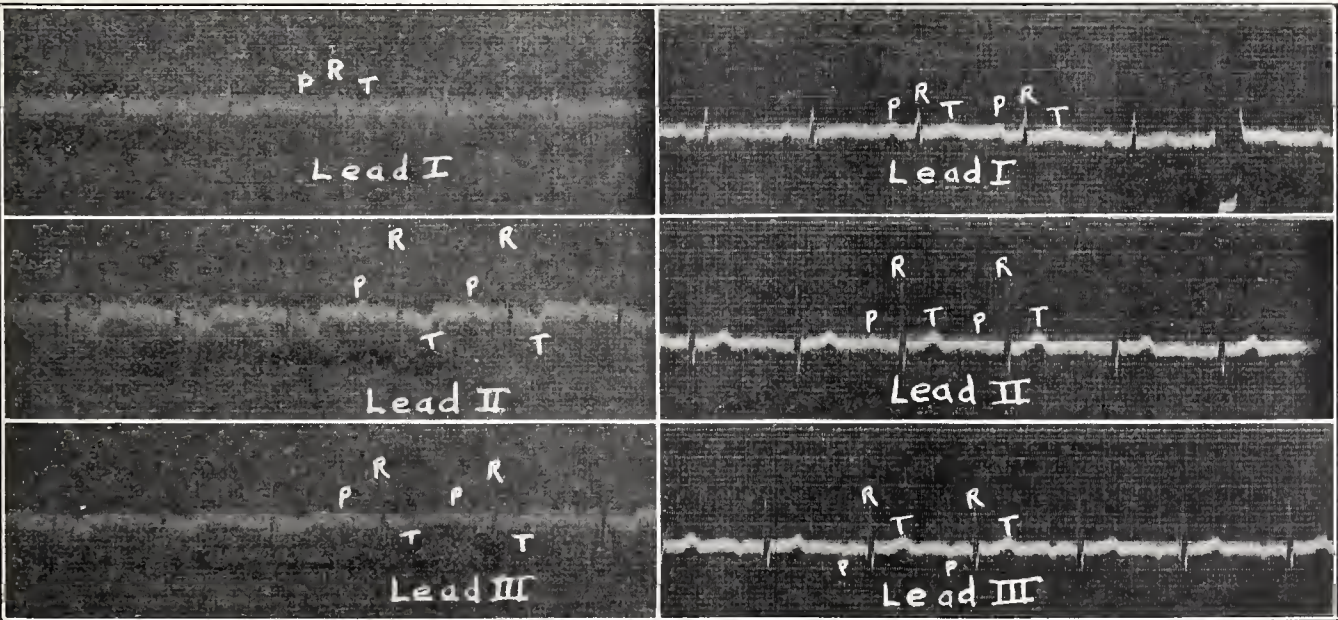


Fig. 2b (Case 2)

Fig. 2c (Case 2)

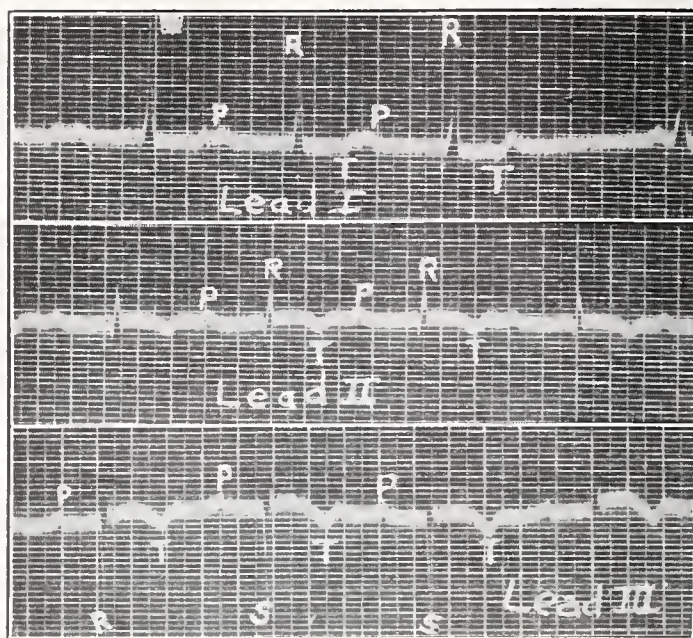


Fig. 3a (Case 3)

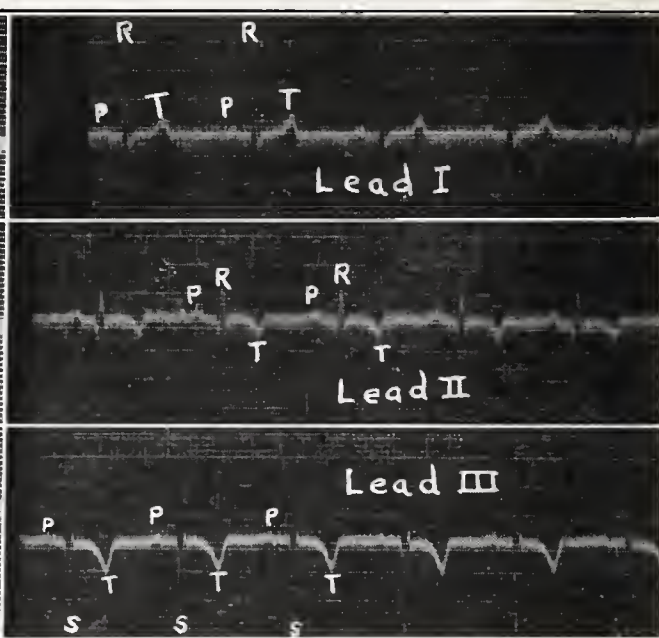


Fig. 3b (Case 3)

ment as given above. During this time there was never any recurrence of precordial pain or cyanosis, but occasional attacks of palpitation. After six weeks of further rest in bed at home, another electrocardiogram was taken which revealed restoration of the normal sinus rhythm with disappearance of the A-V block. The T wave is definitely positive in Lead I, but inversion still remains in Leads II and III (Fig. 3b).

CASE 4.—Male, age forty-nine. This patient was first observed in March 1927, while in the hospital for an acute toxemia. There had been some precordial distress for several weeks, but no definite pain or dyspnea. Palpitation had been a feature. In October 1927, the patient was seen again, after a severe attack of pain in the chest which radiated to both arms and under the left shoulder. This attack came on immediately after climbing a flight of stairs. On examination he was quite pale, perspiring freely, slightly cyanosed and perceptibly short of breath. The pulse was soft and compressible, irregular and 100 per minute. The heart tones were indistinct and no murmurs were heard either at the apex or base. The rhythm was interrupted every fourth beat by premature contractions and the blood pressure was 132/98. The heart was not enlarged to percussion. After four weeks of rest in bed, the patient was transferred to the hospital where an electrocardiogram revealed inversion of the T wave in the second and third leads with a suspicion of the coronary curve associated with notching of the Q R S complex in all leads and left axis deviation (Fig. 4). This man is now attending to his practice, but limiting his work to office consultation, and has had no severe attacks during the last three months.

CASE 5.—Male, age sixty-three. The patient was seen on May 2, 1927, several hours after a severe attack of precordial pain. The attack lasted about an hour until a physician was called who recognized the symptoms as cardiac, and administered one-quarter grain of morphin sulphate. Relief was obtained almost immediately. The patient had been healthy until the last few months, when several attacks of precordial distress were noticed, particularly in the early morning.

On examination the lips were slightly cyanosed, the skin pale, pulse 80, blood pressure 132/80, vital capacity 62 per cent. There was slight enlargement of the heart to the left, no apical or basal murmurs and no cardiac irregularity.

Rest in bed for four weeks was advised and during this time there was no recurrence of symptoms. Fol-

lowing the rest period an electrocardiogram revealed inversion of the T wave in the second and third leads and notching of the Q R S complex in all leads (Fig. 5). The patient has been quite comfortable for eight months, but has restricted his activity considerably and takes small doses of theobromin daily.

CLINICAL COURSE

The clinical picture presented by the above cases is that of severe collapse associated with intolerable pain in the chest, referred to one or both arms, boring, knife-like, tearing or gripping, and sometimes referred to as a choking pressure. Nausea and vomiting may be present. Cyanosis is usual and may be associated with pallor and cold sweats. Fever and leukocytosis are frequently found during the first few days. Dyspnea is a prominent feature and eventually edema of the lungs may develop with spitting of blood. Convulsions may occur (Case 3). Physical examination is frequently of little aid. The heart may or may not be enlarged, and the blood pressure and pulse are variable factors. Occasionally alternation of the pulse is found and the heart tones are frequently very poorly heard and there may be no murmurs. A pericardial friction rub is of diagnostic importance, but is not always heard. When present it is more apt to be heard twenty-four hours after the onset.

In most instances a large coronary artery is occluded and death is instantaneous or at least supervenes within a few hours. In the cases mentioned above, the onset and symptoms were most severe, but instead of collapse and death the patients gradually improved and all are now living and well, after periods varying from two months to a year. Probably a small arteriole was occluded in these instances and small areas of infarction formed which were not large enough to embarrass the heart sufficiently to cause death.

PATHOLOGY

The pathology is generally that of sclerosis and atheroma of the coronary vessels. The descending branch of the left coronary is more seriously involved in the majority of cases. Infarcts gener-

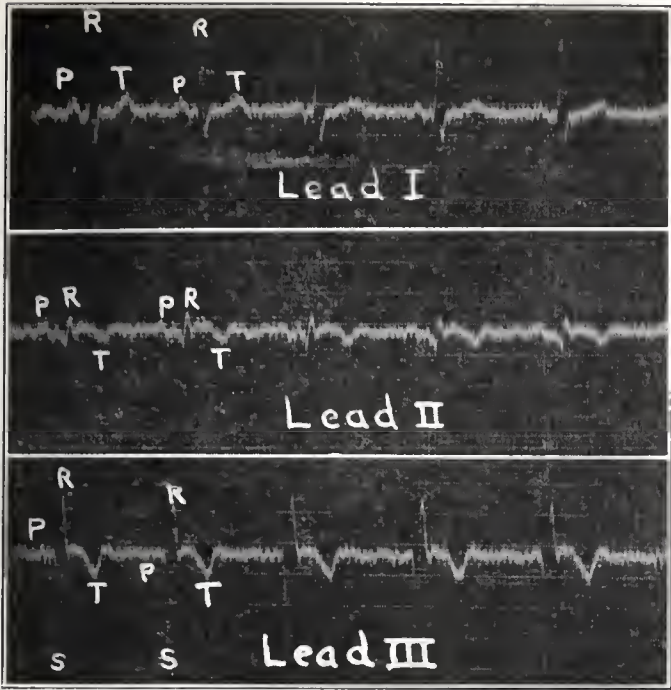


Fig. 4 (Case 4)

ally occur in the anterior two-thirds of the left ventricle. If the area of infarction has been large and the inflammation extensive, the pericardium may be found adherent at the site of infarction. Fatty degeneration, so-called, is not a factor in the production of these changes. Probably the fatty degeneration, so frequently referred to in the past, is merely the myocardial degeneration resulting from coronary sclerosis with small occlusions. At autopsy the heart will generally show some hypertrophy. Certain etiological factors should be considered in passing. The causative factors of arteriosclerosis and hypertension are frequently those of this condition. The most important chronic infections include syphilis, rheumatic carditis, and ulcerative endocarditis. Minor factors which may be responsible for a precipitation of the symptoms are: extreme physical exertion calling for a sudden powerful contraction of the heart, such as the carrying of heavy weights, coughing, defecation, coitus. Great excitement and emotional upsets, and overeating should also be placed in this category.

COMMENT

The cases given above confirm the diagnosis of coronary artery disease both clinically and from the standpoint of the electrocardiograph. In only one case had digitalis been given, that of Case 2, and in this case no digitalis had been taken within one week of the electrocardiographic tracing. A definite inversion of the T wave is found in the records of certain individuals who have been taking this drug, and the effect is still frequently present even after ten days. The fact that a later tracing showed a normal picture may indicate first, that the attack was an acute coronary spasm, and second, that digitalis was actually a disturbing factor in the electrocardiographic tracing. It would seem from a study of these cases that coronary artery disease gives rise to a certain clinical picture and should be more easily recog-

nized in the future by the aid of the electrocardiograph. When an individual past forty years of age has an attack of so-called acute indigestion following a heavy meal or unusual physical or mental exercise, the possibility of coronary artery disease must first be considered. The diagnosis can be made only after a careful history and complete cardiac study. 1052 West Sixth Street.

DISCUSSION

HARRY SPIRO, M. D. (870 Market Street, San Francisco).—I find it more than ordinarily difficult to add any information to what Doctor Langley has already stated because in a more than ordinarily concise manner he has covered the subject of coronary artery disease. Furthermore, I would like to congratulate him on his results. He is far more fortunate than I am. The questions of diagnosis as Doctor Langley has explained them will always be of prime importance. It surely must be disconcerting to the conscientious physician to make a diagnosis of acute indigestion and then have his patient suddenly die. The differential diagnosis on the other hand, between coronary artery thrombosis and acute gall-bladder disease, is not always easy and a mistake is forgivable, especially so if one makes a diagnosis of coronary artery thrombosis when it is only an acute gall-bladder disease. The most disconcerting thing about the whole question of diagnosis of coronary artery thrombosis is the indefiniteness of a physical examination, as Doctor Langley has pointed out. The heart may be of average size, the rhythm of the heart, particularly as found at the radial artery, may be perfect, the heart sounds may be clear, and yet the patient be in imminent danger of death. This is what makes the history of such marked importance. Here is the one case in which, if the symptoms are typical, all laboratory tests, physical examination, x-ray examinations, or electrocardiograms, may be disregarded to let the patient's statements rule. The proof of the above statement is the fact that a patient may have the symptoms typical of coronary artery stroke such as described by Doctor Langley, may die a cardiac death, and yet postmortem examination disclose very little. One of the principal reasons is that these patients may die because a very small branch of the coronary artery may be suddenly occluded and this sudden occlusion so irritate some part of the ventricular muscle as to produce ventricular fibrillation and thus instant death. I believe it is generally recognized that the most frequent cause of death in angina pectoris is ventricular fibrillation. The question as to whether one should use digitalis or vasodilators is another problem which is under active discussion. I believe that if a physician is actually convinced that a patient has an acute coronary artery stroke, particularly if there is associated

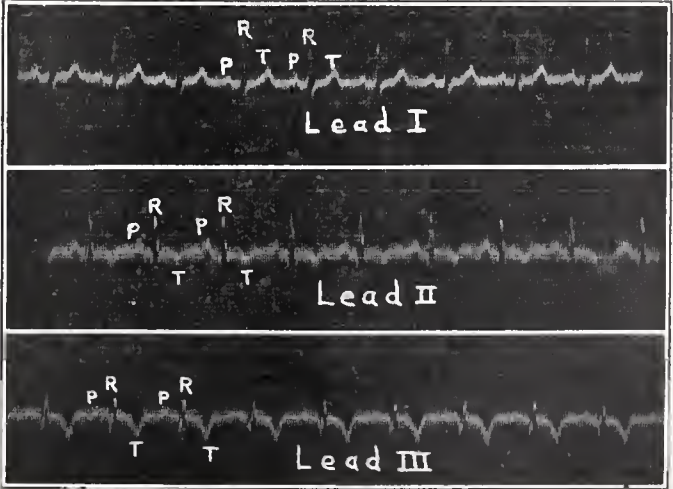


Fig. 5 (Case 5)

with the symptoms a marked fall in blood pressure, that he is then justified in the use of digitalis. If the heart can be supported and the circulation maintained long enough, there is a chance for the patient to make a recovery. On the other hand I feel that if the patient gets any relief from the use of vasodilators, these should be used either alone or in conjunction with digitalis. I regard it as particularly ominous for a patient who has had symptoms of coronary artery stroke to develop an arrhythmia of any type during the acute phase. These patients appear to be doing fairly well, have no more pain, and die very, very suddenly.

Another dangerous type is one in which the patient has recovered from his attack of pain, feels more than ordinarily well, has no distress of any kind, and yet his pulse rate is fast, over 100. These patients frequently drop dead the first time you let them stand up or go to the toilet. If a patient has had symptoms of coronary artery stroke, has apparently recovered and in the first few weeks of his recovery has a fast pulse rate, over 110, keep him in bed.

Shall a man smoke or shall he not? I believe nicotine is a cardiac muscle irritant; for that reason it is probably best for the patient to discontinue the use of tobacco and only resume its use very gradually, if at all.



FRANKLIN R. NUZUM, M. D. (Santa Barbara Cottage Hospital, Santa Barbara.—I, too, would like to add my commendation of Doctor Langley's paper. I would like to add a further word concerning the changes in the heart muscle that follow an acute blocking of one of the coronary vessels. An anemic infarct is the result. The size of the infarcted area depends on the size of the occluded vessel. A very firm, strong heart muscle within twenty-four to forty-eight hours following an occlusion becomes at first light yellow in color and later dark red; its softness is surprising, and the ease with which one may thrust his finger or a blunt probe through such an infarcted area makes one wonder why many more of these patients do not die of a rupture through the infarcted area.

In some more than six hundred reported instances in the literature, of rupture of the heart wall, the area of infarction has, in over 95 per cent, involved the anterior descending branch of the left coronary artery, *i. e.*, that vessel which supplies the anterior wall of the left ventricle and a portion of the ventricular septum. In these six hundred instances death resulted from a rupture through the infarcted area, and the exact location of the infarct and the obstruction in the coronary artery were demonstrated by postmortem examination. Since the anterior wall of the left ventricle is usually infarcted, the fibrinous adhesions which form over this area rub upon the anterior surface of the pericardial sac, producing a friction sound. This friction, when searched for, is very frequently present. It develops ten to eighteen hours after the occlusion of the coronary vessel. It usually disappears within ten to twenty-four hours after it first becomes audible. When present it is the most striking point in the physical examination in proving the diagnosis of a coronary occlusion. Temperature, a leukocytosis, and a so-called coronary T wave in the first or second lead of the electrocardiogram complete the clinical findings and indicate a large area of infarction of the myocardium.

When small branches of the coronary arteries are occluded, the areas of infarction may be minute. These instances are often more difficult of diagnosis, but are equally important clinically, since, as has been stated, ventricular fibrillation may follow, and this type of disturbed rhythm results in death.

That rupture of large infarcted areas occurs more commonly than was generally believed is becoming recognized. I personally have nine pathological specimens in which such a rupture occurred. In each of these instances the patient had gotten out of bed within twenty-four to forty-eight hours following the vessel occlusion and death was sudden.

The ability of nature to repair such an infarcted area is equally impressive. Large, firm, fibrous scars,

involving particularly the left ventricular wall, in some instances measuring several centimeters in length and breadth, attest to the importance of keeping such a patient at bed rest until complete fibrosis has had time to take place.



EUGENE S. KILGORE, M. D. (490 Post Street, San Francisco).—Clinical interest in coronary thrombosis is rightly focused mainly on diagnosis; and it is gratifying that intelligent study now usually establishes the diagnosis during life, whereas a few years ago it was very exceptional for this to occur. Doctor Langley has illustrated the value of electrocardiography and the usual symptoms and physical signs.

With little more additional data the electrocardiogram or the pericardial friction sound may establish the diagnosis. More frequently, however, a careful study of symptoms alone will be nearly or quite decisive, and conversely, and which is most important, a superficial attention to symptoms is usually responsible for the occasional costly error of mistaking coronary thrombosis for an acute abdominal condition.

Pain is often absent, or it may be mild or excruciating. Most commonly substernal, it may be precordial, diffusely over chest and back, or occasionally only epigastric. It may or may not radiate—usually to the left arm, especially under the arm to the elbow, wrist or radial distribution in the hand; or to the right arm or both arms, the neck, jaw, or occiput. It is variously described (according to preconceptions of the patient) as "pleuritic," "indigestion," etc.; but more particular questioning will often bring out the quality of pressure—"vise-like," "constriction about the windpipe," "internal gas pressure," "petrified feeling," etc., or it may be simply indescribable. It is not colicky. It is not lightning-like in onset, but usually has a distinct crescendo period. It may be worse after eating and somewhat relieved (if not too severe) by belching. It is likely to come on without effort and be unrelieved by rest, by nitrites, and by small or moderate doses of morphin. Especially in the cases with pain under the lower sternum or in the epigastrium, belching is frequent, and nausea and vomiting not uncommon. These symptoms, with pain, fever, and leukocytosis, create at times a very perplexing diagnostic problem; and it is here especially that a careful scrutiny of the heart by all methods including the electrocardiograph is most important.

THE SURGERY OF TUMORS OF THE BLADDER*

By FRANK HINMAN, M. D.
San Francisco

Discussion by Benjamin H. Hager, M. D., Los Angeles;
James F. Percy, M. D., Los Angeles; R. L. Rigdon, M. D.,
San Francisco.

BEFORE 1910, when Edwin Beer introduced fulguration, the only treatment available for a bladder tumor was surgical, and the results were poor and discouraging for both malignant and benign growths. There have been no epochal advances of surgical technique since then. Nevertheless we are able today to accept the responsibility of treatment of such a case with a certain sense of confidence which, however, is far from complete. The newest agent, radiation, is bolstered high above its ability by a hopeful enthusiasm, and we seem now to have reached a dead level of advance in the cure of vesical malignancy.

TREATMENT METHODS

Perhaps the next rise will follow improvement of surgical method, but discussion of this is pos-

* Read before the Urological Section of the San Francisco County Medical Society, January 29, 1929.

sible only in relation to the two epochal advances that give us our present advantage in the treatment of tumor of the bladder. Otherwise we might become surgical enthusiasts, revert to the hopeless state before 1910, and attempt to treat all tumors surgically. This would be even worse, in view of our definite advances, than to follow the advice of some of our radium optimists and eschew all surgery. The surgery of tumors of the bladder, therefore, must be presented in relation to these other two well-recognized methods of treatment, fulguration and radiation. One must know what can be accomplished with each one of these three methods and which one of them to apply in a given case. Urologists disagree radically about both points. One small group claim wonders for radium, the majority are doubters. Another small number extol fulguration and deep diathermy, methods which are often scoffed at by the radiologists. A third group cling to the idea that where fulguration fails, surgery is the hope of the future. Yet out of all this confusion some order may be gotten. The writer will consider the subject on the basis of his own personal experience; and will then take up the viewpoints of others.

PRIMARY CONSIDERATION

In the first place some uniform method of choice of treatment is required. The same plan cannot be applied to all types and conditions of tumors. The pathologic differentiation into epithelial, mesothelial, and embryonal groups of various types has no clinical value. We now know that the processes of change of both benign and malignant tumors of the bladder are fundamentally the same. All bladder tumors are potentially malignant, but there is considerable difference in

the degree of malignancy; for example, of a simple papilloma, a papillary carcinoma and a squamous cell infiltration. Broders has received some clinical support of his histologic classification of tumors into four grades on the basis of degree of malignancy as determined by the character of cellular changes and mitotic activity. Grades I and II being relatively benign, and Grades III and IV, highly malignant. In practice the value of this classification depends on the correctness of the assumption that all cells of any one tumor will show the same grade of malignancy. Examination of a specimen removed from an outlying polyp would have to give the same information as from any other portion, even from the infiltrating base, if these cells ran true to type. But there must be so many exceptions to this rule as to largely nullify its value. Another objection to placing entire confidence in such a classification is the fact that many times even the very benign Grade I tumors have been found to infiltrate the bladder wall extensively, a characteristic recognized clinically as indisputable evidence of marked malignancy.

CYSTOSCOPIC FINDINGS AS A GUIDE TO SURGERY

The only reliable guide to choice of treatment, the only one of immediate and practical value, is information obtained by cystoscopic study. A knowledge of the type, position, size, extent and number of tumors in a bladder, irrespective of the exact pathology, is a safe foundation on which to outline a plan of treatment. Not always can all of these facts be determined at the first cystoscopy. Bleeding may obscure the picture. Smaller tumors may be hidden behind larger tumors which are in the foreground. The plan of treatment may

DIAGRAM 1.—Cystoscopic Classification of Bladder Tumors

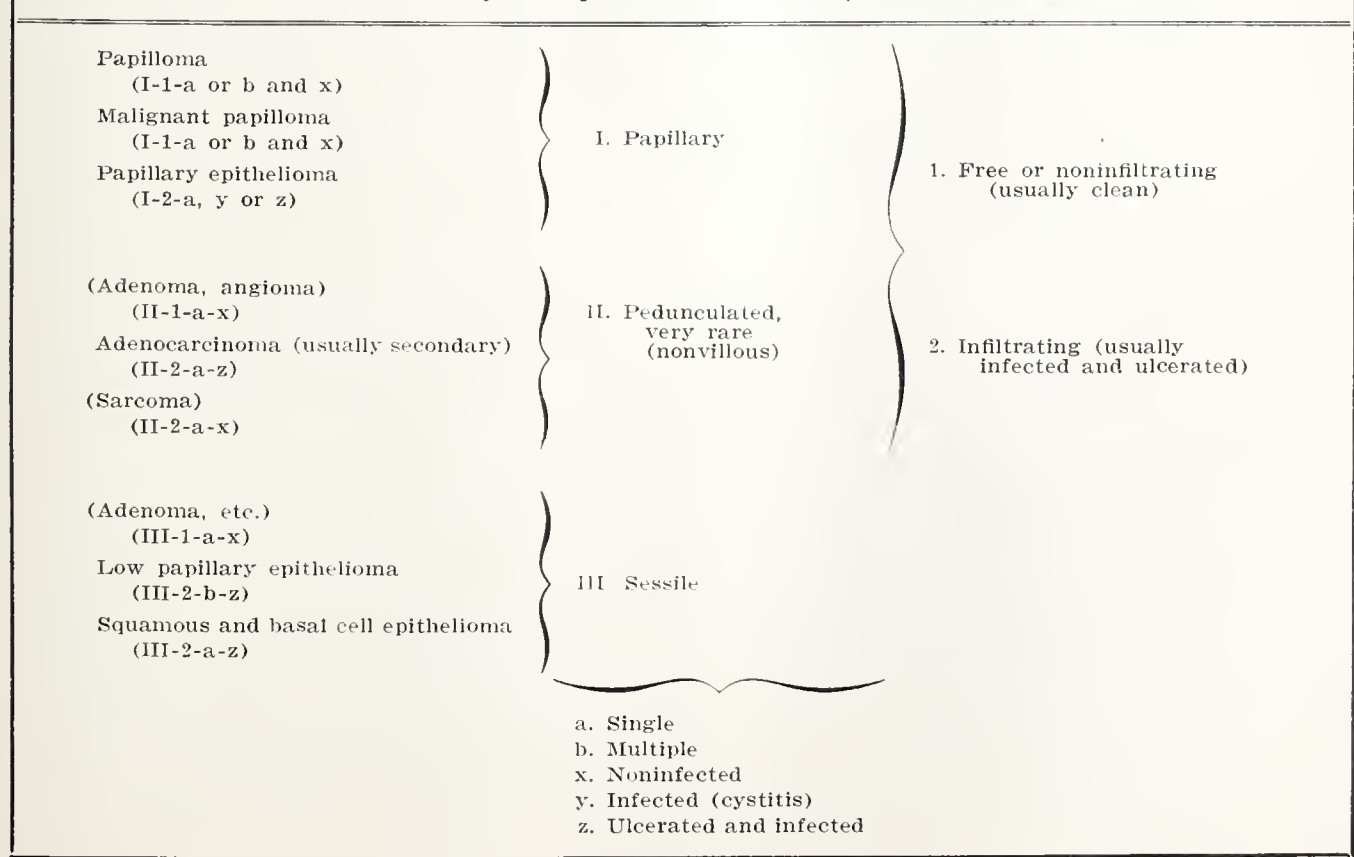


TABLE 1.—Cystoscopic Analysis of 172 Personal Cases of Bladder Tumors

		Single	Multiple	Clean	Infected	Ulcerated	Total
Group I. Papillary tumors:	1. Free	17	50	37	29	0	67
	2. Infiltrating	37	13	1	19	30	50
							117
Group II. Pedunculated:	1. Free	(2)			(1)	(1)	(2)
	2. Infiltrating	(10)	(secondary)				
Group III. Sessile:	1. Free						
	2. Infiltrating	17	(6 secondary)		14	5	11
							130
Cases not grouped because of incomplete descriptions							26
Group IV. Secondary tumors:		Prostate	Sigmoid	Ileum	Rectum	Vagina	
		6	4	1	4	1	16
							172
Summary: Primary bladder tumors 130							
I. Papillary				117			
II. Pedunculated				12 (10 secondary)			
III. Sessile				17 (6 secondary)			
				146 (16 secondary)			

have to be tentative and a change of attack clearly be contemplated should the result of the initial treatment prove disappointing. But the cystoscopic picture in conjunction with other clinical facts, such as the history and physical findings, particularly those of rectal or vaginal palpation, renal function and x-ray exploration, is the first guide of treatment.

Cystoscopically two types of tumor usually are quite easy of recognition, the papillary tumor and the flat, smooth-surfaced, infiltrating tumor. Between these two extremes there are all sorts of gradations, many of which are difficult of interpretation, but for practical purposes the following rather diagrammatic classification will serve as a guide to initial treatment. It is based on this objective distinction, that a bladder tumor may be papillary and villous, may project intravesically but with a nonvillous, smooth surface, a very rare tumor, or be so flat and broad that its surface is almost on a level with the bladder wall.

These types may be called papillary I, pedunculated II, and sessile III. Any one may be free on its pedicle and noninfiltrating, may have an ulcerated surface, or show infiltration of the neighboring bladder wall. The association of ulceration or infiltration is a reliable indication of malignancy. They may be single or multiple and with or without cystitis. The free, clean, villous growth is almost certainly a papilloma, the infiltrating flat tumor a malignant epithelioma, and a careful study of the associated conditions, as outlined in Diagram 1, will enable fairly accurate inference of the intermediate groups.

COMMENT ON TABLE I

The above analysis (Table 1), dealing with a cystoscopic analysis of 172 cases of bladder tumors, is an attempt to group the writer's own

cases according to the scheme of cystoscopic classification in Diagram 1. But it is open to criticism because the method has actually been in use by him only recently, earlier cases having been grouped by the description entered in their hospital or office records, which are often incomplete. Therefore subsequent pathologic findings cannot be taken as any criterion of the accuracy of cystoscopic observations and interpretations or of the value of the above scheme. However, it well illustrates the basis of choice of treatment which has been uniform in our clinic for many years, and will be of interest in connection with the results obtained by the treatment chosen on this basis.

Of 117 cases of papillary tumors there were sixty-seven cases in whom the tumors had a free pedicle; a single papilloma in seventeen cases; multiple papillomata in fifty; and fifty cases in which infiltration of the bladder wall was diagnosed. Thirty-seven of these infiltrating tumors apparently were single tumors, but this no doubt is a frequent error, inasmuch as the majority of these tumors were so large as to cover a considerable area and, although giving the impression cystoscopically of one solid mass, were often no doubt multiple and confluent.

If tumors of the bladder that are secondary to an extension from a neighboring malignancy, as of the bowel, prostate, or vagina, are excluded, only two of the 172 cases showed pedunculated growths and in neither of these was there a pathologic report. One of them recurred as a papilloma, so that it is most likely that the observation of an original pedunculated tumor is at fault; and the other responded to fulguration, which would tend to disprove its having been a true pedunculated tumor. Secondary growths are commonly adenocarcinoma, a very exceptional primary tu-

TABLE 2.—Treatment Used in 172 Bladder Tumors

TYPE OF TUMOR CYSTOSCOPICALLY	NOT TREAT- ED		FULGURATION						RESECTION												CYSTOTOMY						CYSTECTOMY										Total
																											FIRST STAGE						SECOND STAGE				
			Alone		With Radium				Free		REIMPLANT				Both		With Radium		With Diathermy		Both		Neph-rostomy		UreTERS To:												
	L	D	L	D	L	D	L	D	L	D	L	D	L	D	L	D	L	D	L	D	L	D	L	D	L	D	L	D	L	D							
I. Papillary																																					
1. Free: Benign & Malignant			61	2	4																									67							
2. Infiltrating		1	9	4	4	6	2	6					1					1	3	2	4		#1 #3		#2		#1 #4 #5	#2		48							
Recurrent								2																						2							
II. Pedunculated																																					
1. Primary			1				1																							2							
2. Secondary		6		1		2								1																10							
III. Sessile		1					1	1		2	1		1		2						1				#6			#6		11							
Secondary		2				1									2												#7			6							
IV. Not Stated	2	3	11		5	1								1									#8				#8			24							
Recurrent	1							1																						2							
TOTAL	3	13	82	7	13	10	4	10		2	1		2	2	4	1	3	2	5	8 cases all dead																	
	16		112						19						17						8							172									

L—Living.
D—Dead.

mor of the bladder, and vesical adenocarcinomata are commonly pedunculated in form. The great rarity of primary pedunculated growths, as shown by this and other analyses, other than adenocarcinoma, makes the finding of a true pedunculated tumor very suggestive of its being secondary to some adenocarcinoma of a neighboring organ, but it must be remembered that such a secondary invasion may appear as a flat ulcer (six cases).

There were seventeen typically flat sessile and infiltrating growths, all infected and the majority ulcerated. These were squamous or basal cell epitheliomata or secondary adenocarcinomata.

Twenty-six cases of bladder tumor are not grouped in the above classification because of the incompleteness of the cystoscopic records. Most of them, however, are analyzed later with respect to treatment.

PLAN OF TREATMENT

Cystoscopic findings outline treatment on the following plan:

Fulguration Group.—All papillary villous growths are subjected to fulguration. One thorough treatment usually demonstrates the probabilities of success by this method. As a rule during fulguration partially coagulated portions of the papillary mass come away on the fulguration tip and are satisfactory specimens for histologic study. But the clinical result of this initial treatment is of far more value than the pathologic report. Case after case of malignant papilloma and papillary carcinoma have been cured by fulguration alone. This fact should be emphasized. No credit can attach to the relief of such a case by radiation or surgery either alone or in combination. To the writer's mind there is no reason to subject these tumors to open cystotomy because

they are large or multiple. Furthermore the cystoscopic approach has the advantage of repetition as often as desired. Persistent repeated endovesical fulguration will often accomplish more than massive transvesical fulguration or diathermy. So satisfactory are the results of fulguration for the majority of vesical tumors that few would hesitate to choose it could they have but one of the three methods (fulguration, radiation, surgery) at their disposal.

Radiation and Surgery Group.—If initial fulguration of a papillary villous tumor fails to produce a definite and marked change, then persistence in its use will probably fail of effecting a cure. Such failures occur with marked infiltrating growths. The plan of attack now lies between radiation and surgery. If the tumor is resectable, surgery is preferable even though a ureter must be transplanted. If the tumor is so large or so situated that successful resection seems unlikely, radiation or transvesical diathermy can be elected. No uniform plan of radiation or transvesical diathermy can be outlined. There is too much difference of opinion of their respective merits. Tumors differ markedly in their degree of response. Many highly malignant tumors are radio-sensitive; less malignant ones often radio-resistant. Knowing a tumor to be radio-resistant, surgery would be the only hope.

If the tumor is of the low infiltrating papillary type with crater ulcer or is flat and sessile (Type III), initial fulguration is useless, and radiation or surgery must be used.

COMMENT ON TABLE 2

A brief review of the writer's own cases will illustrate this plan of treatment, as outlined in

Table 2, covering treatment used in 172 bladder tumors.

Fulguration alone was used in sixty-three non-infiltrating tumors, fulguration and radium in four; with satisfactory results in all but one. In that patient, vesical perforation occurred with extraperitoneal extravasation, relieved by immediate suprapubic drainage, but death occurred two weeks later from embolism. Fulguration alone was used in thirteen patients for infiltrating papillary carcinoma; fulguration and radium in ten patients. Four of the former and six of the latter are dead. Fulguration alone was used in eleven of the twenty-six cases in which the cystoscopic record is incomplete.

Radium alone was used on six patients for infiltrating papillomata, all of whom are dead, and in one patient with squamous cell epithelioma who is dead. Also in five patients in whom the type of tumor is not stated, who are all living.

Surgical treatment has been used in this series of 172 cases in forty-four; partial cystectomy or resection in nineteen; cystotomy with radium implantation or diathermy in seventeen; the first stage of ureteral transplantation preparatory for cystectomy in six cases; total cystectomy in two cases. All eight of these cystectomy patients have died.

Resections were performed in eleven of the patients with infiltrating papilloma. Nine are known to be dead, the longest period of survival being five years. Two were alive at last note; one two years, and the other six months, respectively. In ten infiltrating papillary tumor patients cystotomy was performed, and radium seeds implanted after diathermy six times, and diathermy alone was applied in four. Of the latter patients three are dead and one living now about one year; of the former, four are dead, one living almost two years, the others dying within the year; two were alive at last note but less than one year. In five, patients with extensive involvement, the first stage of radical cystectomy was attempted; all are dead.

Of the eleven patients having flat sessile tumors, two patients were treated by cystotomy with radium, one with diathermy, seven by radical surgery, and one patient was not treated. The first lived four and one-half months, the second one month, and the untreated patient two weeks. Of the seven surgical patients, four had resection (with reimplantation of the right ureter in two, of the left ureter in one, and of both ureters in one). In two patients the ureters were not transplanted, and in one a total cystectomy with abdominal drainage was performed. Duration of life in the five patients known to be dead was respectively, nine years in one, (who was cystoscoped about six months before death and seen to have a recurrence into which radium was implanted unsuccessfully), and two years, one year, and six months in two. Two patients died post-operatively on the first and second day and two patients were living when last heard from, two months and two years after operation.

THE TECHNIQUE OF BLADDER SURGERY

There are three objectives of surgery of tumors of the bladder: first, operation for the complete

removal of the tumor either by resection of the involved portion of the bladder wall with a wide margin of healthy bladder, or by radical cystectomy with ureteral transplantation; second, operation for the open treatment of tumors either with direct radium implantation or by massive diathermy; and third, operation for relief of the urinary obstruction and other abnormalities. The first method is radical; the second, therapeutic; and the third, a palliative type of surgery. For purposes of discussion the three may be outlined as follows:

TABLE 3.—Surgical Treatment of Tumors of the Bladder
Personal Cases

I. Operation for Removal of Tumor:	
1. Resection	
a. Without ureterocystostomy.....	14
b. With ureterocystostomy	5
2. Cystectomy with:	
a. Suprapubic ureteroneostomy	2
or In two stages, the first stage being:	
b. Lumbar nephrostomy.	
or c. Ureterorectoneostomy (or both).....	5
The second stage, the removal of the entire bladder, vesicles, and prostate.	
II. Operation for Treatment of Tumor:	
1. Cystotomy:	
a. With diathermy and fulguration.....	11
b. With radium implantation	6
c. With snare removal or curettage and a. b.	
III. Operation for Relief of Urinary Obstruction:	
1. Cystotomy drainage.	
2. Nephrostomy drainage	1
3. Ureterorectoneostomy.	
44	

COMMENT ON DIFFERENT METHODS

It would hardly be indicated to give in detail each of the surgical steps of these procedures, but the writer would like to emphasize three steps which a review of his own experience leads him to believe as of the utmost importance in relation to operative mortality. The high mortality that follows surgery of bladder tumors is not due altogether to the condition it fails to alleviate. The present review of the writer's own cases convinces him that inherent defects of the surgery itself are somewhat responsible. One opens the bladder and removes a benign prostate with an operative mortality of around five per cent. Barringer opened the bladder for simple radiation with a mortality of three per cent; but Edwin Beer reports a 33 per cent operative mortality after radium implantation through simple suprapubic cystotomy, and a 21 per cent mortality after radical resection. Just what is the operative mortality of bladder tumor surgery is very difficult to estimate, and it is unfair to compare figures too closely. Everybody analyzes his own cases differently, and no two individuals will use a uniform classification. The trauma, spread of infection, locally with dependent pockets of poor drainage, and upward to the kidneys because of ureteral obstruction, as well as prolongation of operation in cases of resection, as compared to simple cystotomy for radiation or diathermy, make of the objective of removal a much graver surgical procedure than that of open treatment or of urinary drainage. But in this connection it must be understood that many cystotomies are not simple cystotomies because in the beginning the bladder was opened for resection and more or less extensively immobilized before the inoperability of the tumor was discovered. Diathermy or radium were then

applied as a substitute. The surgical trauma and difficulties of proper drainage are just as great or greater in this type of cystotomy as in resection and, therefore, so is the risk. Neff has emphasized this point by advocating delay in opening the bladder after suprapubic exposure so as to minimize spread of infection, and the low operative mortality reported by Barringer and Keyes must be compared to higher reports in the light of their cases being, as a rule, much better surgical risks since they elect open radiation for the majority of bladder tumors irrespective of type.

UNFAVORABLE FACTORS IN BLADDER SURGERY

As a leading factor against recovery in any bladder surgery is the frequency of ureteral abnormality either before operation—the most frequent position of vesical neoplasms being in the region of the ureteral orifices—or after operation, a majority of resections having necessitated reimplantation of one or both ureters. Pyelonephritis is often the silent burden that brings defeat. Preliminary nephrostomy offers little in the way of prevention in these advanced cases of cancer, as it means further surgery on patients already so debilitated as to be almost prohibitive surgical risks. And yet if we are to continue surgical attacks upon vesical cancer, this factor of ureteral obstructive and back-pressure pyelonephritis, as a complication either of the condition or of the surgery, must be recognized and combated. Of our own nineteen patients for resection in bladder cancer, one died of embolism on the fifth day, one of pneumonia on the ninth, and one on the forty-fifth of general sepsis, an operative mortality of 15.8 per cent. Of the seventeen cystotomy patients, four died in the hospital (on the sixth, eleventh, twenty-sixth and thirty-fifth days), a surgical mortality of 23.5 per cent. Of the eight first and second-stage cystectomies, six cent. In only two of these last patients was the patients died in the hospital, a mortality of 75 per bladder removed, one patient living six months. The other six patients had advanced bladder cancers with obstructed ureters in whom surgery was advised as palliation more than cure. A majority of the above postoperative deaths were autopsied, and the striking findings in practically all were pyoureters, pyonephrosis, or pyelonephritis.

Face to face with the above discouragement, only two paths are open, either to admit that surgery is useless and rely altogether upon fulguration and radiation or, still believing in it, to revise and perfect our present methods. It is fair to take this much consolation—that all the above forty-four surgical cases were extensive or advanced infiltrating type tumors, the majority in individuals over fifty-five years of age, and that the two longest survivals of the extensive infiltrating tumors were after resections; one patient living five years and another nine years. There are a few patients living, but not heard from. Furthermore, radium in our hands was not of any material help or benefit in these deeply infiltrating tumors. No patient survived its use longer than one year. The writer has no faith in radium for this type of case. Nor do the statis-

tics of others give him any hope; but, in spite of a row of surgical failures, he believes that where fulguration fails and the tumor is at all resectable, it should be resected. If not resectable, cystectomy is in order if at all feasible. If cystectomy is out of the question, the simplest thing that will make the patient the most comfortable should be done (palliation). The writer believes that we are a long way from a perfect technique for radical bladder surgery, just as we are in the case of the malignant prostate. The difficulty in each is ureter transplantation. Coffey's recent contributions to the technique of uretero-intestinal transplantation are very encouraging in this connection. A safe diversion into the bowel with control of urinary sepsis would certainly open up possibilities of radical removal of the whole lower tract, bladder, prostate, vesicles, and all. Not to be misunderstood, it should be stated here that the above group of infiltrating tumors that have been subjected to operation are the radio-resistant type of tumor. Some papillary infiltrating tumors are highly radio sensitive, and whether or not they should be treated by radium endovesically or by open cystotomy with radium implantation or, when accessible, by radical resection, are questions to be settled open-mindedly. Broder's classification gives promise of value, since most tumors graded III and IV have been found by Barringer to be radiosensitive, but the microscopic grading of tumors is unreliable, so that the only safe guide, after all, is the cystoscope. When to use x-ray is another problem. A working plan of treatment that conforms to our present knowledge of results, and that will act as a guide as to when to operate, is outlined in Diagram No. 2.

DIAGRAM 2.—Plan of Treatment

- I. Papillary Tumors:
 - First—Fulguration.
 - *Second—Pathology.
 - Third—Surgery for tumors graded I and II. Radiation for those graded III and IV.
 - *Fourth—Surgery.
- II. Pedunculated Tumors:
 - First—Pathology.
 - Second—If benign, nothing or surgery. If sarcoma, radiation or surgery when possible. If adenocarcinoma (secondary), radiation or palliation.
- III. Sessile Tumors:
 - First—Pathology.
 - Second—If epithelioma, surgery or palliation. If adenocarcinoma (secondary), radiation or palliation.

(*If ineffectual.)

COMMENTS ON SURGICAL TECHNIQUE

Should operation be selected as the method of treatment, preparation on the same principles and for the same reasons as before prostatectomy should be carried out. Initial nephrostomy or cystotomy may be required in order to restore renal function. If the patient fails to survive these therapeutic procedures, he most certainly would have died of the more extensive operation of which they are in preparation. At the time of operation the two factors that influence, more than anything, its ultimate success or failure are patency of the ureters and pelvic drainage. Autopsies of patients dying after extensive bladder operations show a preponderance of renal infections and of retention abscesses in the pelvis. It

is a safe policy to place in all reimplanted ureters large retention catheters that lead out suprapubically so as to maintain ureteral patency during the early days of convalescence as well as enable antiseptic lavage of the renal pelvis. For the same reasons retention ureteral catheters are indicated after extensive radiation or diathermy, whether endo- or transvesically, of tumors located in the region of the ureteral orifices. A combined suprapubic and perineal attack will secure better and dependent drainage as well as through-and-through irrigation for all extensive resections as well as cystectomies. Preliminary to suprapubic incision the patient is placed in the lithotomy position, the legs being held by assistants or nurses, and through a lateral perineal incision the space alongside the rectum and prostate (or vagina in the female) between levator ani and transversus perinei is opened up by blunt finger dissection and a good-sized tube or urethral catheter is inserted and secured here. Later extraperitoneal freeing of the base of the bladder exposes the inner end of this tube which may be used for drainage or the end of another tied to it for retrograde placement.

SUMMARY

It is fair to expect that attention to these three factors, (1) preparation of the patient; (2) ureteral patency and renal infection; and (3) dependent perineal drainage will reduce the present operative risk of resection from 15 or 20 per cent to 5 per cent. The conclusions to be drawn by this review of cases and operative experience may, therefore, be summarized as follows:

1. Bladder tumors may be classified cystoscopically as papillary, pedunculated or sessile tumors.
2. All papillary tumors should have initial fulguration. Fortunately the majority of papillary tumors seen early disappear under fulguration. If ineffectual, the pathology of the tumor will determine the next step. Highly malignant papillary tumors (graded III or IV) not destroyed by fulguration should have radiation and, if ineffectual, radical surgery. Less malignant growths (graded I and II) not destroyed by fulguration should have surgery. It is an open question whether all tumors that fail to disappear under fulguration, irrespective of pathology, located in an accessible position, should not be immediately resected.
3. Pedunculated tumors are rare and are either benign or are sarcomata or secondary adenocarcinomata. Knowledge of the pathology determines the line of treatment.
4. Sessile tumors are always malignant and almost always radio-resistant. Surgery is indicated except in those adenocarcinomata secondary to growths of neighboring organs.
5. All patients to be operated should have preparation on the same principles that are recognized as essential in the preparation of patients for prostatectomy. Nephrostomy or retained ureteral catheter may be required.
6. Ureteral retention catheters should be used during convalescence whenever indicated.

7. Combined suprapubic and perineal drainage is indicated in all extensive bladder surgery.

384 Post Street.

DISCUSSION

BENJAMIN H. HAGER, M. D. (1136 West Sixth Street, Los Angeles).—Doctor Hinman's analysis of the treatment of bladder neoplasms is in reality an enviable record. It is so thorough that I can but emphasize a few of the principles which have a bearing on cure and life expectancy.

It is regrettable that there is to date no universal nomenclature that suffices to catalogue with any degree of uniformity the gross and microscopic interpretation of kinds and degrees of malignancy. However, the American Urological Association is now engaged in obtaining complete histories and clinical findings, together with microscopic sections of all bladder tumors, in an effort to establish a more accurate and uniform description and to evaluate the end-results of the various forms of treatment. It behooves all those interested in the subject to aid this cause by complying with the requests made by the committee.

We support the belief that all bladder neoplasms should be regarded as malignant. The malignant aspects may not be conspicuous, but metastases have been observed as arising from primary bladder growths, which growths, in terms of textbook description, would come under the category of benign papillomata. It seems obvious, therefore, that some plan of cellular differentiation should be adopted, as clinical experience bears out the contention that tumors differ materially in their degree of malignancy, as demonstrated by their manner of growth and reaction to therapeutic measures.

I should like to emphasize the importance of biopsy at the time of cystoscopy. Most bladder neoplasms are easy of recognition. However, it is not infrequent that ulcers, granulomas, and particularly the infiltrating carcinomas, are extremely protean in their appearance, and diagnosis is made only by biopsy. Our experience does not sustain the view that removal of tissue for diagnosis predisposes to metastasis. Frater's elaborate studies have enhanced the value of biopsy. He has demonstrated that epitheliomas of the bladder do not show variation in grade of malignancy in different parts of the tumor. He also observed that with few exceptions malignancy does not increase with recurrence.

It follows, therefore, that, in general terms, the degree of malignancy is more often the criterion of the amenability to treatment than the site and extent of the tumor. As a matter of interest the more malignant lesions have a predilection for the most inaccessible areas from the standpoint of treatment. This is illustrated by the high-grade squamous cell epitheliomas, which occur most frequently in the base or trigone or surrounding the internal sphincter. The review of a large series of bladder neoplasms would indicate that about 95 per cent are epitheliomas. The majority of these are papillomas. It is obvious, therefore, that the great majority of bladder neoplasms are suitable for transurethral electrocoagulation, if they were recognized in the early stages of the disease. Papillomas are like warts; they tend to recur and appear usually, not at the site of the original tumor, but scattered over the bladder mucosa. The high-grade squamous cell epitheliomas and adenocarcinomas tend to recur at the site of the original growth. A cystoscopic examination at intervals, following the destruction of the bladder tumors, is imperative to insure against extensive recurrence.

What was said of the lack of uniformity of pathologic description applies equally well to the treatment. Our present-day armamentarium is limited to transurethral electrocoagulation, suprapubic electrocoagulation or surgical diathermy, segmental resection, actual cautery and radium. When the lesion is small and of low-grade malignancy, transurethral electrocoagulation is the treatment of choice. It is remarkable how extensive an epithelioma may be and still

yield to repeated transurethral electrocoagulation. When the lesion is extensive though of low-grade malignancy, suprapubic exposure with the application of actual cautery or surgical diathermy is advisable. Highly malignant tumors, regardless of extent or location, which permit of resection should be so treated. Surgical diathermy has been the treatment of choice in dealing with highly malignant tumors involving the base, trigone and external sphincter. Radium is probably best used as a palliative measure when extensive resection or surgical diathermy is contraindicated. While the use of radium has not been entirely satisfactory, some remarkable results have followed its use. It should not be used in preference to electrocoagulation or resection when they are feasible. Deep x-ray treatment should not be substituted for any of the previously mentioned methods of treatment, as the value of x-ray treatment in bladder malignancy is very doubtful. It is obvious that before any radical treatment is instituted metastasis should, in so far as possible, be excluded by a thorough physical examination and x-ray examinations of the chest, vertebrae, and pelvic bones.

Hinman's results are similar to those obtained by authorities throughout the world, and his experience again emphasizes the importance of recognizing early those symptoms which presuppose bladder malignancy. Better an unnecessary cystoscopic examination by a competent urologist than to wait for the layman's diagnosis. The good results of the future probably will not be so much dependent upon the perfection of present-day therapeutic principles or the innovation of new procedures as in the early recognition of the disease.

✽

JAMES F. PERCY, M. D. (1030 South Alvarado Street, Los Angeles).—The more I see of present-day discussions of the treatment of cancer in general the more I am amazed that a surgeon of Doctor Hinman's standing in urology would or could write a paper on malignancy of the bladder without once mentioning in its treatment the most important and reliable of all methods so far devised, viz., the heat-carrying cautery. He suggests that we attempt to draw distinctions between radio-sensitive and radio-resistant malignant bladder tumors, forgetting or ignoring that when either of these horns of his dilemma is finally recognized, the patient's malignancy has increased, both in extent and virulence, to an untreatable degree. More than this, I repeat, when he finally decides that fulguration and radioactive agents have failed, his patient is no longer a fit subject for the "useless" surgery he so reluctantly recommends. It is a matter for serious consideration to inquire as to when those who ignore the heat treatment of cancer will learn that when they have applied the limit of tissue toleration of radium and x-ray they have shot their longest bow, and the patient, if his growth does not recede, as it usually does not, is fit for nothing further than medical palliation.

When the cautery is applied we do not have to talk about heat "resistant" malignancies. There is no such tissue, for all cancer cells die when heated to 113 degrees Fahrenheit (45 C.) for ten minutes. As much can be said in condemnation of the cold knife resection of the cancerous bladder. It always increases the risk of an easy and early dissemination of the disease, stimulating it into new virulence and, as well, leaving a surface on which it will grow again. None of these things can be claimed against any sufficient heat infiltration or cautery resection of the malignant bladder.

It is my misfortune to see some of these patients with recurrences in the bladder after they have been treated by fulguration, to say nothing of the other methods mentioned by Doctor Hinman. I see a much larger number of recurrences where these same methods have been employed to destroy surface malignancies. When they come I frequently ask myself: "If recurrences develop on the surface of the body, following the employment of fulguration where the problem is easily accessible—all out-of-doors, so to speak—how can one expect good results by the same

methods applied indirectly through a long magnifying tube into the depths of a dark cavity in a thin-walled more or less mobile membranous sac such as the bladder?" In all the history of surgery no method, where the technique cannot be applied by direct vision and tactile sense, has persisted in the favor of surgeons for very long.

That fulguration does cure some cases of bladder malignancies I have no doubt, for the reason that any treatment, no matter how bizarre, will cure cancer, *sometimes*. All of which merely emphasizes that we know nothing fundamental or worth while about this disease. That fulguration will cure a larger number of bladder carcinomas than infiltration of heat from the cautery through the open bladder, is an unfortunate statement which I earnestly challenge.

One of the, to me, serious mistakes in Doctor Hinman's technique is covered by his statement that "persistent repeated endovesical fulguration will often accomplish more than massive transvesical fulguration or diathermy." This is when I see some of these patients with their malignancy stimulated into new virulence by "repeated" applications of the frail, weak, feeble, meager, insignificant (when compared with the nature of the problem attacked), and completely inadequate sparking needle that is the instrument of election in this method. The first operation is the only real chance the surgeon has to destroy a malignant growth, and he cannot do it successfully the greatest number of times when seeing but a part of his problem through a small instrument such as the cystoscope while working in a great cavity. Every subsequent attempt at destruction must carry with it a certain accumulating geometrical ratio of failure. Fulguration in the treatment of cancer of the bladder except, possibly, in the most minor growths, is equivalent to asking a surgeon to go after a hippopotamus with the bean shooter of his boyhood days. It is this inadequate attempt at thoroughness with insufficient measures that will account, at least in part, for many otherwise preventable failures in the treatment of cancer of the bladder.

✽

R. L. RIGDON, M. D. (909 Hyde Street, San Francisco).—The paper of Doctor Hinman is in line with the high type of work we have come to associate with his name. The doctor has done what so many of us fail to do, namely, carefully studied and recorded his observations and findings. It is only by methods such as these that real advances can be made in any of the problems that confront us.

In my experience there are but two classes of bladder tumor that need be considered in determining treatment: (1) the type that can be benefited by means of work done through the cystoscope, and (2) the type which cannot be so benefited. In examining a bladder cystoscopically, it is not wise to attempt a too definite classification; the tumor can or cannot be benefited by endovesical methods. If it is possible to cure by local methods, those should be employed regardless of the type.

Between these two extremes there is a shading group that may or may not respond to local treatment. My feeling is that any tumor that offers any hope of cure should be subjected to thorough fulguration. The result of this procedure will be very soon manifest, and very often complete cure or marked alleviation will be indicated. Repeated fulgurations, at intervals determined by cystoscopic examinations, will take care of these tumors in a most satisfactory manner. I am sure all of us have patients who consult us at intervals, on whom we have removed tumors by the electrocautery method and there has been no recurrence over a period of years.

There is another group in which recurrences are seen at longer or shorter intervals. By examining these patients at stated intervals, these recurring growths can be detected and treated very early and thus kept under control. There is practically no operative mortality. The patient is subjected to an inconvenience, it is true, but the relief afforded is so great that the inconvenience can be disregarded. Practically every tumor that is not obviously beyond

help should be given the benefit of fulguration; if this fails it is time to try other methods.

The second group of tumor is altogether a different matter. The line of treatment chosen must be individual. I think it is a mistake to paint too gloomy a picture of surgery, for every now and then the resection of a circumscribed growth, even though located at the base of the bladder, is successful in eradicating the tumor, at least for many years. If the tumor is circumscribed I am sure its removal by surgery should be undertaken. If transplantation of the ureter is required, this should be done. There is a certain degree of mortality attached to this operation, but when we remember that we are dealing with a deadly enemy we are justified in recommending to the patient an operation, in the face of all the risk involved.

Those tumors that are sessile, widespread and infiltrating, are practically hopeless of relief. In these patients I believe we can justify ourselves in attempting any form of treatment or no treatment. Radiation may be tried, and this I certainly recommend. Resection may be attempted or total cystectomy. The Percy cautery may be our salvation. We know in the beginning that we are dealing with a fatal malady and that the only chance, if any, for the patient is by operation.

At the present time, unless there are strong contraindications, I believe the Coffey method offers the best means of relief. This method of treatment is radical and difficult, especially in the hands of inexperienced operators, but Doctor Coffey has developed the technique to such a point that it may be hopefully undertaken. It is for the surgeon to perfect his technique or to call to his assistance someone who has comprehended the fundamental problems involved and has developed the necessary skill to perform it.

DISCIPLINE OF THE LICENSED PRACTITIONER*

By PERCY T. PHILLIPS, M.D.
Santa Cruz

DAVID HARUM, from the wisdom of his worldly contacts with the cussedness to which man is prone, credited our weaknesses to the fact "that we all have as much human nature as others, if not more." Medical boards are faced at times with the unpleasant problem of dealing with the sinful nature of those licensed practitioners who have offended against the ethics of our profession and the state laws governing the practice of medicine.

There are two considerations we must have in mind in dealing with such offenders. First, they must be restricted or eliminated as in the judgment of the board seems best, so that their further activities will not jeopardize the welfare and health of the commonwealth. Second, they must be punished to the extent which a deliberate offense would warrant.

All procedure in matters of discipline should be conducted in such a manner as to demonstrate to the profession that the primary object is to conserve the rights and health of the public and not to see how severely the individual be punished. We must endeavor to make the punishment a reasonable one and, if possible, one that will give the offender another opportunity if he profits by the discipline meted out to him. In this way medical boards earn the good will and confidence of their

fellow physicians over whom they are given temporary control by political appointment. The board, too, must conduct its activities in a way to convince the public that during times of sickness and trouble none shall presume to give advice and medical treatment except he be honorable and proficient.

CREATION AND POWERS OF BOARDS

Before proceeding with the consideration of those special problems in discipline confronting boards, I am going to recapitulate the principles as expounded in law, creating boards of medical examiners and conferring on them such powers as are considered necessary and advisable in the performance of their duties; namely, issuing the license that certifies to the qualifications of one who aspires to the treatment of the sick and afflicted and confers upon him the right to pursue his activities in his profession in the commonwealth in which he lives. Second, to discipline those licensed individuals who, by their conduct, are forgetting that a privilege with its attendant responsibility has been given them and are conducting their activities in such a manner as to be prejudicial to the health and well-being of the citizens of the state.

In this address I shall quote extensively from the "Cyclopedia of Law and Procedure" and give excerpts from citations therein contained without, in each instance, identifying the decision or opinion cited:

"License, in its general sense, means a right or permission granted by some competent authority to do what is unlawful at common law, or is made so by statute or ordinance, including the one authorizing or requiring the license. A privilege is the exercise of an occupation or business which requires a license from some proper authority, designated by some general law, and not free to all, or any, without such license. It follows that an occupation or privilege license is the permission granted to an individual by a competent authority to engage in and carry on the particular business or calling to which it refers."

Whether a license to practice medicine is a property right and is to be treated under the law as such is a question in law that as yet seems undecided. Courts have rendered divergent decisions. The legal definition of a property right is as follows:

"The right of property consists in the free use, enjoyment and disposition of all a person's acquisitions without any control or diminution save only by the law of the land; the right to acquire power and enjoy it in any way consistent with the equal rights of others and the just exactions and demands of the state."

We know that while a license to practice medicine is a revokable privilege it is the most valuable possession of a physician and should ever be appreciated and treated as such. It is based on two primary requirements; namely, scientific attainment and good moral character. No one may deprive himself or be deprived of his scientific attainment except through the wilful impairment of his mental faculties. He may deprive himself and be deprived of his moral character by perverting his knowledge to illegitimate uses and by violating in any manner the general laws promulgated for the conduct of an individual in society. The technical question of the property

* Read before the Annual Congress on Medical Education, Medical Licensure and Hospitals, Chicago, February 20, 1929. Published in *Federation Bulletin*, April, 1929.

right involved in the license to practice medicine touches the average physician only as a defense after laws are infringed.

"It is well settled that under the police power inherent in the state, the legislature may enact reasonable regulations for the examination and registration of physicians and the practice of medicine and surgery, and such statutes violate neither the federal nor the state constitutions. The authority of the legislature does not end with declaring what qualifications he who enters the practice of that profession shall possess. As it has plenary power over the whole subject it alone must be the judge of what is expedient both as to the qualifications required and as to the method of ascertaining those qualifications. The only limit to the legislative power in prescribing conditions to the right to practice is that they shall be reasonable; and whether they are reasonable the courts must judge. If the regulations and conditions are adopted in good faith and operate equally upon all who desire to practice and who possess the required qualifications, and if they are appropriate to the end in view, to wit, the protection of the public and are attainable by reasonable study or application, then the fact that the conditions may be rigorous will not render the legislation invalid."

BOARD AUTHORITY QUASI-JUDICIAL

"The authority of a state medical board in granting or refusing licenses to applicants, or in passing on the reputability of colleges, is neither legislative nor judicial, but quasi-judicial, involving the exercise of judgment and discretion. The ascertainment and determination of qualifications to practice medicine by a board of experts appointed for that purpose is not the exercise of 'judicial power,' as that phrase is used in conferring judicial power upon specified courts, although the statute provides for an appeal therefrom. Therefore, a statute authorizing a state board to ascertain and determine the qualifications of applicants to practice medicine is not unconstitutional as conferring judicial power on the board. A state medical board has full authority to prescribe rules and regulations governing the issuance of certificates of medical practitioners. An existing board, however, has no power to review the action of a former board. The requirement that a medical board shall issue to the holder of a diploma a certificate entitling him to practice medicine is based almost universally upon the express condition that the diploma shall be from a reputable institution or an institution in good standing. Whether a college be reputable or in good standing is not a legal question but a question of fact and is usually left to the judgment and discretion of the state board unless the status of such schools and colleges is fixed by statute. Where the law does not define the method by which the board shall proceed to determine the reputability of a college such board may perform its duty in that regard in any reasonable way it may deem proper; and the decision of the board in this regard cannot be coerced or reversed by the courts in the absence of arbitrary and oppressive conduct on the part of the board. State medical laws sometimes contain a provision authorizing resort to the courts for relief either by way of appeal or by writ of review against the action of a board of examiners in refusing a license to an applicant or revoking the license already granted. The law usually provides the manner of taking this appeal, but failure to do so does not effect the right."

Pending an appeal from a refusal to grant a license or pending the hearing on writ of review when a license has been revoked the court has no power to allow the applicant to practice.

REVOCATION, SELF-EXECUTING JUDGMENT

The revocation of a license is a self-executing judgment and the judgment takes effect when pronounced and must so stand until after a full hearing on review when the court may uphold or

reverse it. Our experience has been that it is very difficult to get a justice or police court to function if there is an appeal pending in the case of one whose license is revoked and is subsequently arrested for practicing. There seems to be no question as to the legal status of a self-executing judgment. One of the duties of a board is to oppose energetically this attitude of the courts and prevent the abuse of a just provision of law. An appeal in some cases is delayed months or years before finally decided, during which time the respondent goes merrily on practicing medicine.

"The state, in the exercise of its police power, may prescribe the qualifications of persons desiring to practice medicine and may create a board whose duty it shall be to hear and determine any complaint made against any person holding a physician's license and certificate and revoke such license or certificate for any cause provided for in the statute. The power to revoke such license or certificate is not a judicial power, and cannot, under the state constitution, be vested in the board of examiners. Whether such a statute authorizes the revocation of a certificate issued prior to its passage depends entirely upon the wording of the statute. The fact that a license is issued to one not entitled to it will not prevent the board from revoking it.

The grounds commonly designated by the statute upon which the medical board is authorized to revoke a physician's license or certificate are unprofessional, dishonorable or immoral conduct. Unprofessional or dishonorable conduct is not defined by the common law and what conduct may be of either is a matter of opinion only. The word unprofessional has been judicially defined as synonymous with dishonorable. For this reason it has been held in several cases that such a statute is void for uncertainty. Similar statutes have been construed in other jurisdictions without the question of validity being raised, the courts merely considering what can be deemed unprofessional, dishonorable or immoral conduct.

The action of a medical board in revoking a physician's license or certificate for unprofessional or dishonorable conduct, being in its nature judicial, the board has no power to institute such a proceeding without a reasonable notice of the charge against him, and the time and place of the trial thereof. But a board, in conducting such an investigation, is not a judicial tribunal, and is not governed by the technical rules applicable to law courts.

The practice in revocation proceedings before a medical board being more flexible than that allowable in the courts, evidence which tends to prove or disprove the point at issue may be introduced, although not the best evidence which might be had."

Our experience has been that the more nearly we adhere to court procedure and rules of evidence as established in the courts the more satisfactory and more effective are our hearings. This is reasonable, for rules of evidence are based upon reason and sound judgment of those who are trained in the administration of law. We have adopted the following procedure at all legal hearings. The following resolution is passed:

"*Resolved*, That the president be and he is hereby authorized for and on behalf of and as an act of the board to make the necessary rulings in relation to the admission or rejection of testimony and motions made incident to any pleadings on trial in each case on the legal calendar at this meeting. It is the duty of the president to inform himself to the extent of being able to rule intelligently."

He will make mistakes, as judges do, but he is not likely to make many reversible errors. The

appellate and supreme courts have indicated their appreciation of our efforts to admit the best evidence and only the best evidence. With this procedure we find ourselves better able to render a just decision, one not liable to reversal.

"Where no appeal is provided for, in the absence of fraud, corruption or oppression, the findings of a medical board in a proceeding to revoke a physician's license are conclusive with the courts. But an appeal or writ of review in such case is sometimes provided for to the district or circuit court in and for the county in which the hearing was had; and the right is not nugatory, because the legislature has prescribed no rules of practice to guide the district court in adjudicating such cases."

A medical board is not precluded from preferring charges against a physician to revoke his license by the fact that the same charges had been once before passed upon by them and had not been sustained. Nor are the trial and acquittal of a physician in a court of criminal jurisdiction on the same charges exhibited against him by a prosecuting officer, a bar to an inquiry under the statute for the purpose of depriving him of the right to practice. In this connection there are several citations where it is held that the two proceedings are entirely distinct and independent, having different objects in view; the one having regard to the general welfare and criminal justice of the state; the other simply and exclusively to the respectability and character of the medical profession, and the consequences connected with or necessarily flowing from it.

HONOR AND GOOD MORAL CHARACTER

"The legislature has the same power to require, as a condition of the right to practice, that the applicant shall be possessed of the qualifications of honor and good moral character, as it has to require that he shall be learned in the profession. This places upon medical boards the obligation of determining standards of personal character and conduct as well as the standing of medical institutions whose diplomas are offered as proof of technical proficiency."

At present medical laws in the majority of the states only provide for revocation on those things involving character. There is discussion at the present time as to the advisability of universally including gross neglect and malpractice in the items demanding revocation. Before proceeding with such enactment all phases of this subject should be thoroughly considered because those of us with experience in board work recognize the dynamite contained in any suggestion of standardizing methods of treatment.

UNPROFESSIONAL CONDUCT

I shall only discuss those items of unprofessional conduct which are common to the medical practice acts of most of the states and these perhaps are the ones that occupy more of our attention.

First: The wilful betraying of a professional secret. This is so plain that it needs no discussion, but I am referring to it from the fact that it does involve the age-old principle in common law of privileged communication. Confidential relationship prevails in all professions and in none should it be more strictly adhered to than in ours.

Second: Conviction of any offense involving moral turpitude, in which case the record of such conviction shall be conclusive evidence.

Moral turpitude is a term not clearly defined. What constitutes moral turpitude or what shall be held such is not entirely clear. Everything contrary to justice, honesty, modesty or good morals is done with turpitude. The ordinary definition in law is:

"Anything done contrary to justice, honesty, principle, or good morals; an act of baseness, vileness or depravity in the private and social duties which a man owes to his fellowmen or to society in general, contrary to the accepted and customary rule of right and duty between man and man."

There are, of course, cases that admit of no discussion and are recognized by public opinion in general as well as all courts of law as involving moral turpitude. On the other hand, there are the border-line cases that are a matter of individual opinion among right-thinking and well-meaning people. Matters of individual standards of conscience perplex both the courts and defendants and perhaps confuse testimony and influence decisions.

I think we can be safely guided in our decisions by applying this accepted legal definition of morality:

"The rule which teaches us to live soberly and honestly; that science which teaches men their duty and the reason of it."

If all do their duty according to the mere established rules of conduct no one is harmed and society does not suffer. I think under this definition all will agree that any violation of the laws prohibiting the traffic in narcotics, either through carelessness or evil intent, is moral turpitude and should be punished as such. This should apply especially to the profession of medicine, for let us not forget that it is not by scientific attainment alone we have established and maintained our reputation. With science have ever been morality, integrity and service. A service ready to give battle not only for health but for that righteousness that exalteth a nation.

Third: Aiding and abetting an unlicensed practitioner. This question is prominently before the boards in some states in reference to the practice of nurses and laymen administering anesthetics. The law in a few states provides for lay anesthetists who have had special training in the work. In others, as in California, there is no such provision. Such opinions as are available admit that the administration of anesthetics is practicing medicine. There is at least one supreme court decision upholding a verdict for damages against a hospital where death occurred during the employment of a layman for such service. There, of course, is argument on both sides, but it is in the interests of the public and profession that the matter be definitely decided by discontinuing the practice. Creating special class privileges is not in any way advancing scientific medicine or protecting the public health.

Fourth: Advertising. "Mere advertising by a physician is not such unprofessional conduct as to warrant the revocation of his license. If, how-

ever, the advertisement is false and known to be false and is a studied effort to impose upon the credulity of the public for gain, the law is otherwise."

Advertising treatment or cure of venereal or sexual diseases is, perhaps, the most difficult division of the law in which to get a conviction. Of course, the venereal part is plain, but what constitutes a sexual disease? Which organs are sexual organs? Except the advertising matter is plain and without attempt at subterfuge, even though the board sees the intent, it is difficult to convince a court on a writ of review that the language is anything more than is ordinarily used in the professional cards of the urologists. There seems no way to write the law more plainly or more specifically. We must struggle along and endeavor to furnish such testimony to the fact and such expert testimony as to convince the court we are right in our judgment and discipline.

Fifth: Habitual intemperance. No duty confronting the board is so unpleasant as to discipline a professional brother who is guilty of intemperance. It is indeed a sad undertaking to expose the indiscretion of one who is his own worst enemy. We would prefer to cover his frailties with the mantle of charity but our duty to those who have placed their health in our hands often compels us to remove from the field of medical activities an unsafe and dangerous practitioner.

CALIFORNIA BOARD

During the last ten years the Board of Medical Examiners of California have issued 198 citations. Of these forty-seven citations have been dismissed. Eighty-five licenses have been revoked; eight have been suspended and fifty-one have been placed on probation. During this time we have restored four licenses unconditionally and nine with probationary limitations. The courts have restored seven licenses. We have thus been reversed but seven times on writs of review. Such statistics are local and uninteresting except that they indicate a definite policy on the part of the California board to apply discipline in its fairest and broadest sense. Not only does discipline imply correction and punishment but education, instruction, training and culture. We hold that medical boards, not only from the standpoint of their licensing function but also because of their duty to maintain discipline, should take a lively interest in all matters of medical training and education.

INSTRUCTION IN ETHICS

Certain pitfalls in the path of the physician come too frequently to the attention of the boards to be lightly classed as individual cases without general application. Boards should call these to the attention of those whose duty it is to prepare the graduate in every way for an honorable and upright career. More impressive instruction in ethics should be given in the colleges. Code laws appertaining to medical practice are based on the established ethics of the profession as well as upon common law. The student

should be thoroughly impressed with the fact that unless he has a desire and determination to pursue a true professional career his life will be without substance. It is kinder to separate an immoral candidate from his right to practice medicine before he earns a diploma than to leave it to a medical board to sidetrack a career when the time is past to choose another field less governed by moral standards.

MEDICAL BOARD SERVICE

Often when the zero hour comes during our work with the board we members ask ourselves the question: What does the board give us? The question should be what do we give the board? The board gives us an opportunity every man should grasp to assist in maintaining the moral and scientific standards of our profession. It is not a selfish employment. On the other hand neither is it a service that always brings from the public or our fellow physicians the praise that would be reward enough.

In the last analysis service on boards of medical examiners is perhaps our recognition of the fullest demand for service required by that oath we took when we enlisted in the healing art; "that it might be granted to us to enjoy life and the practice of the art, respected by all men in all time."

Farmers & Merchants Bank Building.

"TRAUMATIC HYDROCELE"*

WITH AN ANALYSIS OF THIRTY CASES

By MILEY B. WESSON, M. D.

San Francisco

DISCUSSION by Otto R. Frasch, M. D., San Francisco; George W. Hartman, M. D., San Francisco; F. S. Dillingham, M. D., Los Angeles.

INTRODUCTION

THE term "traumatic hydrocele" is as unscientific a misnomer as is "typhomalaria fever," and should likewise disappear from medical literature. Inflammation, with a resultant blocking of the lymphatics of the scrotum, is the cause of acute hydrocele, while low-grade infection, repeated slight traumas, or prolonged irritations may eventually result in a chronic hydrocele. However, when an enlarged scrotum is noticed, the insurance claimant eagerly remembers some slight injury to which he can attribute it, and generally a diagnosis of "traumatic" orchitis or hydrocele follows promptly.

Trauma and strains have become universal etiological factors for industrial lesions, and are comparable to some of the cultists' dislocated vertebrae and pinched nerves as the cause of all diseases, ranging from backache to hydrocele or hypertrophy of the prostate. The cultists overlook the fact that a vertebra cannot be dislocated, 1195 pounds of pressure crushing the neural arch and 800 pounds more pulverizing the body but leaving the articular surfaces unaffected, hence they have no difficulty in "making an adjustment,"

* Read before the Urological Section of the California Medical Association at its Fifty-Seventh Annual Session, April 30 to May 3, 1928.

precisely as some industrial surgeons are inclined to forget that no pathologist has yet been able to find any evidence of a connection between a strain and a hydrocele or tonsillitis.

Just as the etiological factors responsible for diseases began to be scientifically studied, political elements entered and the pendulum started to swing backward, with the result that trauma again came into its own with physiotherapy as its handmaid. Our scientific ideas of etiology have been subordinated to the questionable hypothesis of "*locus minoris resistentiae*," with the result that there is a tendency to use only one industrial rule, to wit: The man was well and working, he suffered a trivial strain; now he cannot work, therefore, his strain or trauma was responsible for his arthritis, paresis, tuberculous epididymitis, hydrocele, or what not. Unfortunately the scientific urologists, for obvious reasons, only occasionally see industrial cases although such often present fascinating problems; and when they do are surprised to find that their opinions are usually brushed aside in favor of those of orthodox members of the trauma cult.

This article was prepared because nowhere could be found a series of case reports from which any deductions could be made as to the importance of trauma as an etiological factor in hydrocele. This paper is based upon a study of the literature, and upon thirty case reports—twenty-four from my files and six from the California Industrial Accident Commission, the latter representing all that have been passed upon by their medical department.*

SOME NOT VERY OLD VIEWPOINTS CONCERNING DISEASES

Scientific medicine is so young that the majority of us have lived in the day when the doctor was primarily interested in the treatment of diseases and not in their etiology and pathology. Necessarily, some of our present-day theories as to the causes of disease are still based on faith, but although we have all been medically raised, directly or indirectly, on the teachings of Adami's Pathology and Pepper's System of Medicine, we no longer believe that epidemic cerebrospinal meningitis is due to mental or bodily strain, drinking alcohol, exposure to extremes of heat or cold, homesickness, or checking perspiration. Neither do we believe that tabes is due to the jolting of a railroad train, the undue repetition of the sexual act, particularly in an upright position, or the use of alcohol and tobacco. We know that acute spinal meningitis is not due to violent bodily effort, and that malaria is not caused by "swamp poison" caught in the pans of milk exposed to night air. Jacobi, while accepting the theory that infantile paralysis was due to trauma, the mother walking too fast and dragging the child by one arm, thereby wrenching and pulling it violently, still could not understand why, in the great majority of cases, the lesion was situated in the lumbar cord. We know that tetanus is not the result of

strain and as yet have not reaccepted traumatic cystitis as a recognized entity. Yellow fever was attributed to fomites and atmospheric impurities, and the *Stegomyia fasciatus* continued with its work while the city councils of the South financed "shotgun quarantines." Most of us remember the last big yellow fever epidemic in New Orleans when the United States mail was fumigated, the envelopes first being perforated so as to let out the miasmata. Twenty-six years ago yellow fever was endemic in Rio de Janeiro and ships from that port came in rock ballast to Brunswick, Georgia, for turpentine, etc. The United States Marine Hospital Service ordered Surgeon W. C. Hobdy to have the stones individually dipped into a tub of acidulated bichlorid of mercury solution before being carried ashore, and then the sides of the ship's hold had to be thoroughly washed with the same solution. Only a decade ago, no appendectomy report was considered complete unless the survivor remembered when he ate the blackberry jam or grapes; and many a woman with a cancer in the breast painted a vivid word picture of the time she was pinched or kicked by a nursing infant.

Naturally, today we are inclined to be amused by the recital of such etiology and therapy, but are we entitled to laugh? Although every medical student is taught that tabes and paresis are always the result of syphilis, last year the medical director of an eastern industrial accident commission decided that paresis is not necessarily caused by syphilis but might be the result of trauma. One of the universal, recognized, congenital anomalies is the undescended testicle and concomitant hernia, yet such has been legally found to be due to strain and not maldevelopment (Case 27).

ETIOLOGY

The relation of hydrocele, tuberculosis of the epididymis, and new growths of the testicle to injury is not clearly indicated although it is common to obtain a history of a blow on the testicles in these diseases. However, since every man has had his testicles more or less frequently traumatized there is danger of attributing to injury diseases of the testicles which were present before the injury was received and to which the accident merely called attention; the strain or blow being an eagerly remembered coincidence. R. G. Mills says: "As to the influence of indirect strains, I cannot conceive of any mechanism for the production of hydrocele even with the greatest stretch of imagination." W. G. MacCallum adds, "So much seems the result of tradition and more especially of the will to have it so, because it is an excuse for making the insurance people pay." The French school long since abandoned their theory of a spasmodic contraction of the cremaster muscle playing a part in the causation of hydrocele. Any inflammatory process which interferes with the lymphatic drainage of the tunica vaginalis may cause a hydrocele. Commonly an acute hydrocele is due indirectly to a seminal vesiculitis, and directly to an epididymitis. The course of an acute hydrocele corresponds to that of its

* The use of the medical records of the California Industrial Accident Commission is due to the courtesy of the medical director, Dr. Morton R. Gibbons.

cause. It tends to recover as the primary disease improves, and becomes chronic as the cause persists. It is possible for the exciting factor to entirely disappear, however, and leave behind it a persistent hydrocele.

Gonorrhea or tuberculosis of the epididymis are the two infections which most often produce symptomatic hydrocele. The former causes a very acute type, while the latter tends to a more chronic course. In the absence of any genital focus it is possible for a blood-borne infection to be responsible for the inflammatory blocking of the scrotal lymphatics. Chronic hydrocele is also caused directly by infections of the pneumococcus, colon bacillus, typhoid, spirochaeta pallida, and indirectly by erysipelas, rheumatism, and neoplastic growths. Injuries at birth have been held responsible for certain cases of congenital hydrocele, and repeated slight traumas undoubtedly result in a low-grade inflammation and infusion, as demonstrated by the frequency of chronic hydrocele among circus riders and bicycle riders. Chronic inflammation, with or without bacteria present, favors the production of serum; consequently, it is possible for fluid to accumulate as the result of trauma alone, exactly as it does in a knee that has been injured. However, due to a previous injury, conditions are produced that favor the collection of fluid very rapidly under subsequent trauma when the degree of injury may be much less than that required in the first instance.

Chronic irritation of the local circulation is the probable causative factor of the idiopathic cases of the tropics commonly attributed to loose clothing or sexual excesses, both of which tend to hyperemia and formation of serous exudate. *Filaria* and *bilharzia* have frequently been indicted, but never convicted. Occasionally a transitory hydrocele may be due to the peritoneal vaginal process remaining open so that the cavity of the tunica vaginalis communicates with the abdominal cavity. Somewhat more frequently the obliteration of the process is not complete so that various portions of it persist, thereby forming types of hydrocele of the cord. Recent statistics have noted the occurrence of an unusually large number of hydroceles following the resecting of veins in varicoceles, or transplantation of the cord in herniotomies, due to the blocking of lymphatics.

Negative histories of venereal diseases are valueless. It was recognized as an axiom by doctors of past generations that most men would admit a history of syphilis but deny that of gonorrhea, whereas at the present time the workman is prone to deny both, particularly if he has had experience with the old-time "company doctor" who was reputed to attempt to attribute all injuries to venereal diseases, thereby converting them into private cases, such not being covered by his contract. Because of this workman's "viewpoint" a seminal vesicle examination should be routinely made in all cases. If infection is found and there is no history of gonorrhea, in order to complete the record, a careful sexual history should be taken, as admitted abnormalities may furnish a reason for the prostatitis. A nonvenereal prosta-

titis is much more resistant to treatment than one due to gonorrhea.

PATHOLOGY

Inflammation is the local reaction to injury, and it is not always the result of bacterial activity although such is the common cause of acute conditions. Hence, anything which causes local injury to the tissues is a cause of inflammation, be it a mechanical trauma, physical insult (by heat, cold, or electricity), disturbances of altered metabolism and abnormal internal secretion, or bacterial or microbic invasion and growth.

A contusion causes rupture of capillaries with a greater escape of blood into the parts. The fluid and parts of the corpuscles are drained away by the lymphatics, the mass of corpuscles, being out of place, degenerate, their hemoglobin dissolves out and undergoes a series of reactive processes characterized by the color changes of the "black eye." Eventually the leukocytes carry away the debris and the parts return to normal.

In ordinary trauma there is (1) pain, which is increased by motion; (2) loss of function with swelling beneath deep fascia; and (3) discoloration, which will appear probably at once because of injury to superficial structures. *Ocular evidence of trauma, such as ecchymosis, should always be present at the time of an injury that is alleged to result in a hydrocele*, and even then, at best, trauma is only the aggravation factor and not the cause of the hydrocele.

SYMPTOMATOLOGY

The symptoms of acute hydrocele depend upon the virulence of the infecting agent. Pain may be present or absent. In acute gonorrheal epididymitis the exudate is nature's attempt to protect the diseased part from outside injury. It is possible that the tension of the complicating hydrocele may be responsible for part of the severe pain, as occasionally marked relief follows the release of the pressure. The hydrocele accompanying tuberculous epididymitis, on the contrary, rarely causes any discomfort. The symptoms that cause the patients to seek relief are the pain of the epididymitis, or the cosmetic deformity of the tumor.

TREATMENT

The treatment is usually palliative if the causative infection runs a short and acute course, and the amount of fluid is small. With rest, elevation of the scrotum and hot moist dressings, the effusion may be left to absorb. Severe pain with considerable fluid demands aspiration, and this will probably have to be repeated as the effusion tends to reform quickly. If tapping is done, careful palpatory examination should be made at once to determine whether epididymitis or malignancy is responsible. When the fluid fails to be absorbed after some weeks, the hydrocele is considered chronic. In such cases where there is no pain, relief may eventually be sought because of the cosmetic deformity. Various drugs have been injected into the empty sac, the most common being tincture of iodine or phenol followed by an alcohol irrigation. Theoretically the epithelial lining of the sac is destroyed so that the walls will adhere

TABLE 1.—*Analysis of Thirty Cases of "Traumatic Hydrocele"*

No.	Case No.	Age	History of Venereal Disease	Alleged Etiology	Findings	Comment
1	121	55	0	Left hydrocele, strain, 6 yrs. ago.	Right spermatocele, left hydrocele, prostatitis and seminal vesiculitis.	Chronic left epididymitis, Aspiration: 7-8-26—450 cc. 1-26-27—300 cc. 12-27-27—350 cc. Injected 3cc. 5% "220," Cure
2	197	60	0	Blow in groin.	3 successive scrotal operations: Hydrocele of cord (?). Gumma and cellulitis (?). Sarcoma (?) and exitus on operating table.	All surgery and no diagnosis; a questionable industrial case. Death claim paid.
3	263	31	Gonorrhea 20	Swollen testicle following straining at stool 40 days ago.	Prostatitis and seminal vesiculitis. Left epididymitis and hydrocele.	
4	269	25	Gonorrhea 15	Strain from lifting, on following morning hydrocele appeared.	Prostatitis and seminal vesiculitis. Left epididymitis, Bilateral hydrocele.	Rejected.
5	283	50	0	Foot slipped seven days ago.	Prostatitis and seminal vesiculitis. Bilateral epididymitis and hydrocele.	Rejected.
6	302	68	0	Horseback riding, pain in right groin, 2 years ago, swelling began 7 months ago.	Right hydrocele.	Aspiration: 11-21-23—300 cc. 4-22-24—500 cc. 4-29-24—400 cc. Radical operation
7	396	47	0	Blow in groin.	Large left hydrocele; small right hydrocele (not known to patient). Prostatitis and seminal vesiculitis.	(Accepted) Radical operation 12-3-24
8	640	36	0	Blow on testicle 10 days ago. Similar swelling 1 year ago.	Left hydrocele. Prostatitis and seminal vesiculitis.	Left epididymitis found when 140cc. of hydrocele fluid withdrawn. After hospitalization 1 m.o. right epididymitis followed walk of 1 block.
9	670	38	0	"Slipped on top of mountain and rolled to bottom"—hydrocele 3 weeks later.	Right hydrocele.	Aspiration—500 cc. Radical operation.
10	803	57	0	Industrial claims in 1907, 1918, 1923 and 1924. Struck scrotum, and hydrocele followed.	Left hydrocele. Prostatitis and seminal vesiculitis, left hernia.	Rejected.
11	847	30	Syphilis 17 Gonorrhea 19 22, 28	Three days previous lifted 100 lb. weight, turned suddenly, pain in right testicle.	Right hydrocele. Prostatitis and seminal vesiculitis, bilateral chronic epididymitis.	Double herniotomy at 22, followed by right epididymitis.
12	855	58	0	Blow on testicle 5 years ago, hydrocele followed. 10 x 6 cm.	Left hydrocele. Prostatitis and seminal vesiculitis. Stony hard nodule—carcinoma (?) in prostate.	
13	907	23	0	Dec. 13, 1926, lifted a weight and immediate pain in right groin, 3 days later scrotum size of an orange.	Right hydrocele. Prostatitis and seminal vesiculitis. Left hernia.	(Accepted) Radical operation; right hydrocele, small left hernia.
14	1079	36	Gonorrhea 17	1920 right herniotomy; 9-23-25 fell astride bar, hydrocele followed. 11-24-25 aspirated 6 oz. 3-12-27 aspirated 2 oz.	Prostatitis and seminal vesiculitis. Right testicle 10 x 6 cm. Right hernia.	11-4-27 Radical operation; right herniotomy and orchidectomy.
15	1107	63	0	Blow in right groin 4-4-27.	Right hydrocele (20 yrs. duration). Prostatitis and seminal vesiculitis. Tbc. left pubis with sinus in right hydrocele wound. Tbc. right epididymis with sinus.	5-10-27 Radical hydrocele (family physician). 3-14-28 Exitus, pulmonary tbc.

No.	Case No.	Age	History of Venereal Disease	Alleged Etiology	Findings	Comment
16	1240	47	0	Strain of lifting.	Right hydrocele. Prostatitis and seminal vesiculitis.	(Rejected) Radical operation 1-16-28
17	Dr. Kimberlin's case	32	0	Walking up and down stairs and crawling into show windows; no trauma. Swelling on May 1926.		(Rejected) Radical operation 6-13-26. Thick sac. Epididymis negative (?)
18	329	29	Gonorrhea 26 Syphilis 20	Jolting from truck.	Epididymis negative. Prostatitis and seminal vesiculitis; bilateral hydrocele, small.	(Rejected)
19	719	26	Gonorrhea 20	Trauma of groin, 1 year previous.	Urine staphylococcus. L. globus major 2 in. in diameter; left vasitis.	(Rejected) 6-3-26 operation radical hydrocele. Family physician reported subcutaneous tissues of scrotum were congested; tunica vaginalis contained bloody fluid.
20	1002	22	0	1 mo. previous left foot broke through snow crust.	L. tbc. epididymitis. R. epididymitis. Urine, staphylococcus. Inguinal rings tight.	Case accepted as hernia, then large hydrocele appeared and was tapped. 6-18-27 left epididymectomy. (tbc.)
21	1008	54	Gonorrhea 30	"Foot slipped."	Bilateral hydrocele. Chr. prostatitis and seminal vesiculitis. Direct inguinal hernia; median bar.	
22	1036	48	0	Lifting.	Left hydrocele. Left epididymitis. Chr. prostatitis and seminal vesiculitis.	
23	1099	57	0	Trauma to right testicle 6 mos. previous. Hydrocele tapped 5 times.	Right testicle, 6x4"	8-31-27 Right orchidectomy; organized hematocele.
24	1186	46	Gonorrhea 20 23	Jumped 4½ feet to ground. 3 days later right epididymitis. 26 days later hydrocele—aspiration, 300 cc.	Right tbc. epididymitis. Prostatitis and seminal vesiculitis.	Right testicle swollen at age of 10. Past 4 yrs. confined to tbc. sanatorium.
25	*IAC 20031 5-28-26	54	0	Right herniotomy 8-20-22; recurrent right herniotomy Dec., 1922. Scrotal swelling began immediately, surgeon thought it due to buried catgut; then left hernia appeared.		Commission asked: Did the hydrocele have any relation to accident which caused recurrence of hernia? Ruled it did not, "as hydrocele is so common independently of hernia and is so rare following hernia." Awarded — Radical operation.
26	*IAC 1044 3-29-15	?	?	14 ft. ladder slipped from under him. Swelling of scrotum began on following day and after 3 hours it was 12x10". Several years before injured same testicle riding horseback. At time of fall had planned for operation on left varicocele — due to strain.		Commission ruled: "Take nothing."
27	*IAC	17	?	Lifted crate of eggs and felt pain in left groin.	Op. 2-2-26. Left cryptorchism; atrophic testicle partially undescended; hydrocele of cord; posterior to which was a left inguinal hernia; sac contained omentum.	Commission ruled: Liable. Traumatic hernia because wall of hernia was thin, omentum was non-adherent and there were no external adhesions.

(Continued on next page)

(Continued from previous page)

No.	Case No.	Age	History of Venereal Disease	Alleged Etiology	Findings	Comment
28	*IAC 8001 6-8-20	51	Gonorrhea 31	Frequent attacks of cystitis, 3 in preceding 5 mos. For 5 years lump size of walnut in epididymis. Twisted back. No heavy lifting. Testicle sore that night, four times normal size in morning.	Hydrocele for 20 yrs. that would become sore and enlarge whenever he did heavy work.	Commission ruled: Lifting and carrying a heavy door caused an exacerbation of preëxisting quiescent an exacerbation of hydrocele. Op. April, 1920.
29	*IAC (L. A.) 1077 4-10-15	18	?	Fall from bicycle. (One brother operated at 13 for hydrocele due to bicycle riding.)	Fell from bicycle in race 1913. Thrown on car track Jan. 1914, and August 1914. Double hydrocele 5x1½".	Commission ruled: Take nothing. Op. 10-8-15.
30	*IAC 17585 12-27-24	26	?	Struck scrotum with auto crank.	April 1925, left hydrocele tapped twice. Bilateral epididymitis, tbc(?) 4-29-25 Bilateral epididymectomy. Pathology: Chronic inflammation and not tuberculosis.	"The epididymitis has been aggravated by the trauma of his occupation and the right side is definitely secondary to the trouble on the left. (Urological consultant). Ruling: Total temporary disability, traumatic bilateral epididymitis.

*Industrial Accident Commission.

and the cavity be obliterated, but as a rule this is not complete and there is formed a lobulated sac with partitions of scar tissue. Unfortunately such treatment is generally followed by a painful recrudescence of the epididymitis. Five per cent mercurochrome-220 is the most satisfactory drug to use as it is painless, not causing epididymitis, and the result is apparently either an immediate cure or a frank failure. Tapping is justified in old men but rarely in young. However, the only satisfactory scientific way to handle a hydrocele is to first cure the underlying condition responsible for the blocking of the lymphatics and then surgically remove the sac that holds the dammed-up fluid.

REPORT OF CASES

The material used in this study consists of twenty-four private and industrial cases seen in consultation before or after operation, and the records of six in the files of the California Industrial Accident Commission. An analysis of the thirty cases of so-called traumatic hydroceles shows:

Age.—From ages 17 to 68.

Venereal History.—Nine admitted a gonorrheal history, 16 denied all venereal diseases, and five were not asked. Twenty-one had rectal examinations made, and in all cases clumps of pus were expressed from the prostate and seminal vesicles.

Alleged Etiology.—Trauma to testicle, 8; trauma to groin, 4; straining at stool, 1; strain of lifting, 7; "foot slipped," 2; rolled down mountain-side, 1; horseback riding, 1; riding on truck, 1; bicycle riding, 1; strain of continually walking up and down stairs, 1; strain of jumping, 1; un-

known, 2. (Five thought that previous hernia operations might have had some effect.)

Etiology.—

Prostatitis and seminal vesiculitis.....	17
Chronic irritation:	
(a) Horseback riding	2
(b) Bicycle riding	1
Sarcoma	1
Herniotomy	1
Tuberculous epididymitis	3
Cryptorchism	1
Hematocele	1
Unknown (no genito-urinary examination made).....	3
Trauma	0

SUMMARY

1. Hydrocele is due to an inflammatory blocking of the draining lymphatics, secondary to disease of the scrotal contents.

2. There is no authority, or even inference of knowledge, that entitles one to attribute the cause of any disease to trauma, and *whenever trauma is offered as the cause of a disease the proponent should prove his claim, and this cannot be done without substituting faith for science.*

3. As urologists we are not interested in the spread of socialistic medicine by state agencies, nor any arguments as to the justice or racial benefits of same, but we are vitally concerned in keeping honest the etiology of diseases as worked out by this and preceding generations.

4. Unfortunately the industrial accident rulings are made by laymen, and in a recent report of a commission great credit is claimed for the number of sick and injured individuals brought within the fold of this remedial legislative act by "ingenuous theory and broad interpretation." When

did it become necessary for laymen to advance medical theories?

5. Recognized pathological postulates and not politico-medico-legal rulings of industrial accident commissions should decide the causes of diseases.

6. Expediency and economic factors encourage a tendency of the industrial surgeon to ignore the fundamental underlying infection and to emphasize strains or bruises and the long discredited hypothesis of "*locus minoris resistentiae*" whenever a workman complains of a sore back or swollen testicle, or even a gonorrheal urethritis.

7. Thirty case reports of "traumatic hydrocele" were analyzed, and the only one clearly due to acute trauma was a hematocele, while chronic irritation (horseback and bicycle riding) was probably responsible for three cases. Epididymitis secondary to seminal vesiculitis was the common cause, the trauma merely calling attention to a predestined developing condition.

490 Post Street.

DISCUSSION

OTTO R. FRASCH, M. D. (315 Montgomery Street, San Francisco).—The dividing line between accident and disease as a cause of a pathologic condition present is rather vague in many cases. Since an increasingly large number of people now receive monetary compensation in some form for accidental injuries—which they do not receive if the condition is due to the effects of disease—an attempt to determine more definitely the etiology of such cases is desirable.

Hydrocele is a condition which the patient usually attributes to some direct or indirect trauma. He is frequently supported in his claim by his attending physician, who in many cases has attached considerable importance to the patient's story of trauma and has omitted to secure a complete urological examination. No satisfactory explanation of the mechanism by which a hydrocele may form following indirect trauma, such as the strain of lifting or slipping, has been offered. Direct trauma, independent of disease, would have to be of sufficient violence to produce a hematoma within the tunica vaginalis, and such a trauma would produce external visible signs of violence at the time of injury and be accompanied by severe subjective symptoms. The injured person usually, however, gives a history of a relatively minor trauma, and when the report of a physician who saw him soon after the accident is available there is usually no mention of external visible evidence of severe violence. A more complete urological examination in such cases will practically always reveal an underlying epididymitis and prostatitis. The degree to which trauma may aggravate a disease condition is difficult to determine. Given the disease condition, the hydrocele may develop without the trauma, and a hydrocele of any size naturally makes the parts more susceptible to injury.

⌘

GEORGE W. HARTMAN, M. D. (999 Sutter Street, San Francisco).—Consideration of the speaker's data immediately impresses one with the fact that the majority of patients whose presenting complaint was hydrocele had prostatitis and seminal vesiculitis as well. In nine instances this was secondary to gonorrhea. In the few cases not traceable to these causes there were other conditions, such as tuberculosis, sarcoma, and undescended testicle. This series of cases, though small, represents a cross section of the hydroceles which present themselves in practice, and I believe that the author has made his point that the condition is not caused by trauma alone.

Hydrocele is one of the most frequent conditions met in operative urology. It is surprising, in con-

sideration of the number of posterior urethral infections which exist, that it is not seen more often.

Recent study has shown a surprising frequency for infections of teeth, tonsils, nasal passages, and other parts of the body to metastasize in the prostate and seminal vesicles and exist thereafter, unrecognized for prolonged periods, until a careful routine examination discloses them. It is quite possible, under these circumstances, that a mild chronic epididymitis may be produced. In 90 per cent of the hydroceles exposed, the epididymis is found to be the seat of acute or chronic infection. The hydrocele itself may develop slowly and be accentuated by a trauma. Even the so-called traumatic hydrocele of the horseback rider may be secondary to infections elsewhere which, unrecognized in the past, have aroused the suspicion of venereal infection.

Attention is called to the fact that not all chronic epididymites give rise to hydrocele. On the other hand, there are many cases of trauma reported in which there is no hydrocele produced. Should the trauma be sufficient to cause a hemorrhage, one would expect all of the accompanying signs and symptoms.

The question still remains to be settled whether, in the presence of a chronic infection in the prostate and seminal vesicles, an injury causing temporarily great increase in intra-abdominal pressure would be sufficient to carry infection downward, causing epididymitis and subsequent hydrocele. Instances of this sort have been observed.

The postoperative enlargement of the scrotal contents, due to the excision of the hydrocele sac, may be reduced rapidly by the application of diathermy. Hydrocele appearing after operation for hernia or varicocele usually disappears after one or two tapplings.

The speaker's work is well timed. Medicine marches on progressively through error into scientific fact. At times it is almost as difficult to convince the medical as the lay public, but ultimately the truth will prevail.

⌘

F. S. DILLINGHAM, M. D. (320 Merchants National Bank Building, Los Angeles).—The essayist has given us a complete description of hydrocele, covering every phase from history, etiology, pathology, symptomatology and treatment.

I was particularly pleased that he mentioned metastatic infections. So many recognize gonorrhea or tuberculosis as the underlying cause, but are not aware or will not admit that infections of the prostate, vesicles, or epididymis may be caused by some focus.

Szenkier reports an abscess of the prostate in a boy two and a half years old following typhoid fever. Trauma from the rough passage of urethral instruments has caused many a case of epididymitis.

My experience with insurance companies and others is that they blame the gonococcus when the microscope and cultures show only staphylococcus infection.

The original infection may have occurred years before and, causing no symptoms, be forgotten until one of the forms of trauma described in the paper supposedly causes a hydrocele. In every patient operated for varicocele, as a prophylactic, I believe it wise to operate the tunica vaginalis also so as to avoid the possibility of a hydrocele later.

As has been brought out by others, many severe blows on uninfected testicles (as in the game of handball) are not followed by epididymitis or hydrocele, while it usually follows if the student gives a history of past infection.

⌘

DOCTOR WESSON (Closing).—The discussion has emphasized three points: (1) Nonvenereal (metastatic) prostatitis is very common but generally overlooked because the prostate is not investigated in the absence of a history of gonorrhea. (2) Ingrained medical folklore is often as hard to eradicate from the physician's mind as from the layman's. (3) Hydrocele is not due to trauma, but to infection.

DEAFNESS AND THE CHILD*

REPORT OF CASES

By LAWRENCE K. GUNDRUM, M. D.

*Los Angeles*DISCUSSION by *Frank H. Rodin, M. D., San Francisco;*
F. F. Gundrum, M. D., Sacramento.

EAR, nose and throat specialists in recent years have shown renewed interest in the problems of hearing. This interest has been stimulated in part by new instruments of precision made possible largely by the work of a few American physicists. These instruments aid in making an earlier diagnosis possible. Precise measurements now make it possible to detect the beginning of a hearing impairment five or even ten years before the deafness would be noticed by the patient or the patient's friends. In this way it is hoped that the pediatricist or otologist may "steal a march" on the insidious process and perhaps arrest it before permanent changes have taken place. There is nothing more lamentable than a deaf adult who has fixed changes. How very difficult it is to aid a great many such patients who come for treatment of deafness is known to all; it is only in the plastic stage of youth that one can expect any marked benefit from treatment.

VALUE OF PRECISION INSTRUMENTS

The Western Electric Company has an audiometer available for the accurate measurements of hearing. The special instrument used in this work was devised by Isaac H. Jones and Vern O. Knudsen, and has been called the audio-amplifier. This instrument has certain advantages; principally the use of the amplified conversational voice, the amplified whispered voice, and the determination of percentage of bone conduction. It is true that the mere percentage measurement of the various tones does give an accurate measure of the degree of hearing; but the amplified voice and the percentage of bone conduction go further than the determination of the hearing percentage, and give more exact information as to the diagnosis of the nature and location of the hearing defect. It has long been known that lower percentages of hearing for the lower tones suggest that the patient is beginning to have an impairment due to a lesion of the middle ear. If in addition the amplified voice is heard distinctly and if the bone conduction is 105 per cent or 110 per cent for the low frequencies, the diagnosis of such an impairment is established by the removal of tonsils and adenoids for correction of the other defects of the nose, throat and middle ear. The defect can be arrested before the changes become permanent. On the other hand, if the upper limit is reduced from 20,000 d. v. per second to 12,000 d. v. or 10,000 d. v. per second or less it is probable that the patient has a lesion of the cochlea or of the cochlear portion of the eighth nerve. Now if the bone conduction is well below normal, 90 per cent or 85 per cent or less,

and if the amplified voice is not distinct and sounds confused to the patient, a definite diagnosis of nerve defect can be made. This leads to a search for foci of infection, for constitutional disease such as syphilis, or for a history of an infectious disease such as scarlatina, mumps, or other toxic condition.

CONDUCTIVE AND PERCEPTIVE DEAFNESS

It is customary to classify deafness into two broad subdivisions: one, those in which the impairment is in the conducting mechanism of the external or middle ear, the apparatus which conveys the sound waves from the outer world into the internal ear; and two, those in which the lesion is in the nervous apparatus of the cochlea or eighth nerve. On that account, these two distinctly different conditions have long been referred to as "conductive" and "perceptive" lesions.

STUDIES HERE PRESENTED

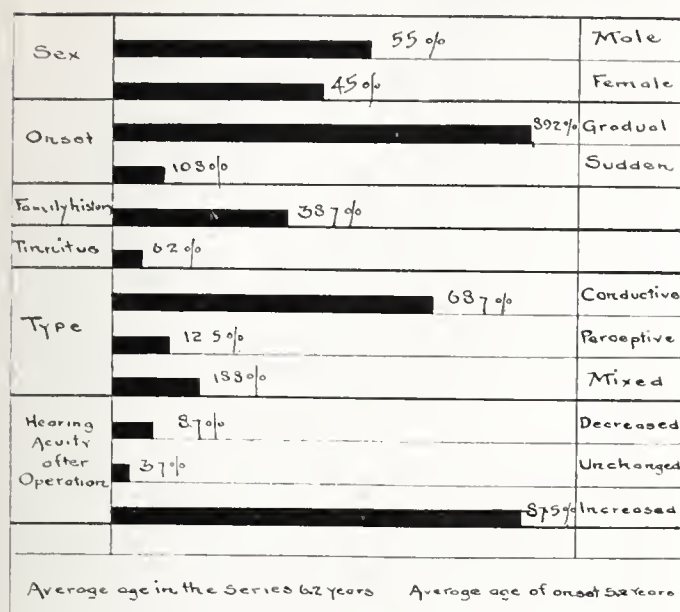
The studies presented in this paper are in the form of a preliminary report. For simplicity, and for statistical study, it seemed best to make measurements of a series of patients with impaired hearing before and after the removal of tonsils and adenoids. The patients were from the California Babies Hospital, from the outpatient department of the Eye and Ear Hospital of Los Angeles, and from the private practices of myself and associates. Two hundred and forty cases were examined before the treatment. Unfortunately only eighty reported for examination afterward. An attempt was made to have the patients report one month after operation, then at intervals of three months for one year, as it was thought that the maximum of improvement would be reached in one year. It was difficult to persuade the patients to return for re-observation; the parents for the most part, feeling when the children were improved, they need not bring them back, or if they did would bring them for only one or two rechecks. Of course no absolute conclusions can be drawn from those who failed to report. However, within reasonable limits it seems probable that parents are more apt to return with a child that was not improved than with one that was much better or with one that they considered cured.

CHART INTERPRETATIONS

Chart 1 shows the results of those in which postoperative examination was completed. Forty-four (55 per cent) were in males and thirty-six (45 per cent) in females. The average age was 6.2 years, the youngest patient being three years and the oldest fifteen years. The age of onset was difficult to determine. In a number of cases no deafness was noticed by the parents. In many of these the parents thought the child "inattentive," whereas a real hearing impairment was the cause of the "inattention." In some cases the parents themselves were deaf. For example, one patient, when first examined, had a slight purulent discharge from the right ear and a large polyp protruding through the perforated drum membrane. Average tonal hearing was 66 per cent in the

* Read before the Pediatrics Section, California Medical Association, at its Fifty-Seventh Annual Session, April 30 to May 3, 1928.

CHART 1.—*Showing Percentages in Patients Seen Pre- and Postoperatively*



right ear and 69 per cent in the left. The father has otosclerosis and the mother a moderate conductive impairment; so that both parents, while intelligent and observant, had failed to notice the marked deafness in the child. In twelve cases, deafness was first noticed when the children entered school. For those whose age of onset could be determined the average was 5.2 years. In fifty (89.2 per cent) the onset was gradual, in six (10.8 per cent) sudden. In three the beginning dated definitely from an attack of scarlatina, one from pertussis, one from influenza and one from

measles. Two followed acute mastoiditis and two were attributed to accidents. In thirty-one (38.7 per cent) there was a family history of deafness.

Tinnitus was a rare symptom. It was present in only five (6.2 per cent) cases. This is very much in contradistinction to findings in deaf adults. Jones and Knudsen in a series of cases found that in considerably more than half of both conductive and perceptive impairments, tinnitus was a prominent symptom. In many adults the deafness is of minor importance compared with the continuous annoying tinnitus. In a few cases actual destruction of the eighth nerve has been resorted to in the attempt to relieve this condition. Yet in two hundred and forty children examined, tinnitus was not the symptom for which relief was sought. It would therefore seem that this symptom is usually produced by a lesion of longer standing. Fifty-five cases (68.7 per cent) were conductive in type, ten cases (12.5 per cent) were perceptive, and fifteen cases (18.8 per cent) showed mixed conductive and perceptive impairment.

The audio-amplifier tests were made immediately before the tonsil and adenoid operations. Some patients were reexamined one month after operation, whereas others could not be located or reexamined until eighteen months later. These statistics show that seven (8.7 per cent) were definitely worse, showing less hearing function than before operation. There was no change in three patients (3.7 per cent); seventy patients (87.5 per cent) showed improvement. Of the seven patients who were worse after operation, the decrease ranged from 3 per cent to 20 per cent. Three patients never returned and in these

CHART 2.—*Summarizing Data in Case Reports*

CASE NO.	DATE	AGE	Amplified VOICE		Whispered VOICE		TONAL AVERAGE		UPPER LIMIT		BONE Conduction		TREATMENT AND RESULTS	DIAGNOSIS
			Right	Left	Right	Left	Right	Left	Right	Left	Right	Left		
I	April 25, 1925	10	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Tonsil and Adenoid Operation April 30, 1925	Bilateral, conductive impairment
	Distinct		Distinct	70%	75%	75%	71%	12500	12500	116%	114%			
	Sept. 11, 1926		Distinct	Distinct	93%	96%	88%	94%	20000	20000	89%	97%	Increase 12% Right Increase 23% Left	
II	May 5, 1926	5	Distinct	Distinct	87%	97%	67%	73%	20000	16384	100%	102%	Tonsil and Adenoid Operation May 7, 1926	Bilateral, conductive impairment
	Sept. 14, 1926		Distinct	Distinct	100%	100%	83%	82%	20000	20000	84%	83%	Increase 16% Right Increase 9% Left	
III	June 8, 1926	6	Fairly Distinct	Confused	73%	69.5%	65.9%	66.2%	9000	9000	60%	88%	Tonsil and Adenoid Operation October 24, 1926	Bilateral Perceptive Impairment
	June 6, 1927		Distinct	Distinct	80%	73%	71.7%	69.5%	20000	20000	96%	91%	Increase 5.8% Right Increase 3.3% Left	
IV	May 27, 1926	7½	Distinct	Distinct	60%	87%	66%	72.6%	20000	20000	112%	112%	Tonsil and Adenoid Operation August 27, 1926	Bilateral Conductive Impairment
	Sept. 7, 1927		Distinct	Distinct	83%	97%	71.8%	89.3%	20000	20000	109%	104%	Increase 5.8% Right Increase 16.5% Left	
	June 28, 1928		Distinct	Distinct	60%	75%	59.4%	71.8%	20000	20000	102%	101%	Decrease 12.4% Right Decrease 17.5% Left	
V	March 3, 1926	11	Fairly Distinct	Fairly Distinct	70%	67%	44.2%	40.6%	13000	13000	95%	105%	Tonsil and Adenoid Operation April 7, 1926	Mixed Perceptive and Conductive Impairment, Bilateral
	Jan. 3, 1927		Distinct	Distinct	77%	70%	69%	61.7%	20000	20000	100%	106%	Increase 24.8% Right Increase 21.1% Left	
VI	Feb. 28, 1927	10	Distinct	Distinct	87%	100%	88%	91.3%	20000	20000	112%	112%	Tonsil and Adenoid Operation March 1, 1927	Conductive Impairment Bilateral
	June 28, 1928		Distinct	Distinct	87%	93%	82%	72.5%	20000	20000	112%	112%	Decrease 6% Right Decrease 18.8% Left	

we were unable to discover a cause for the decrease in the hearing acuity. Four were private patients and are still under treatment for sinusitis. The improvement in those patients who were benefited varied from 5 per cent to 25 per cent. As would be expected, the greatest increase was generally in inverse ratio to the age of the patient; the younger the patient, the greater the benefit. Also those with markedly enlarged tonsils and adenoids were usually much more improved. Chart 2 shows some typical cases.

REPORT OF CASES

CASE 1.—Refers to a typical conductive case. The amplified voice was heard distinctly, the low tones were the most diminished, the bone conduction was greatly increased, averaging 116 per cent in the right and 114 per cent in the left ear. Tonsil and adenoid operations were done on April 30, 1925. Patient reexamined September 11, 1926. As is shown in the chart, there is an increase in the right ear of from 75 per cent total average to 88 per cent, an increase of 13 per cent, and in the left ear from 71 per cent to 94 per cent, or an increase of 23 per cent.

CASE 2.—Refers to an interesting case of conductive impairment. Tonsils and adenoids had already been removed. Infected lymphoid tissue was found behind the tonsillar pillars and in the pharynx. Each follicle was carefully dissected away exposing the nasopharynx by means of a soft rubber catheter passed through the nose. Three months later the percentage in the right ear changed from 67 per cent to 83 per cent, and in the left ear from 73 per cent to 82 per cent. This case is unusual in that the indications for surgical procedures were of such minor nature, and yet it is now evident that these very small bits of infected tissue were the cause of her repeated colds which were producing subacute changes in the middle ear, which if left alone for a number of years would, no doubt, have become permanent.

CASE 3.—Refers to a patient who had a perceptive lesion. The mother had noticed hearing impairment in the child for only one year. Probably it had been present much longer. It is interesting to note the almost exact hearing for each tone for each ear. It will be noticed that the amplified voice was heard only fairly distinctly in the right ear and was confused in the left. The high tones were more affected than the low ones, the upper limit was 9000 d.v. per second in each ear instead of the normal 20,000 d.v. per second, and the bone conduction was below normal. The patient had infected tonsils and adenoids. It was felt that this was the focus of infection causing the hearing impairment. The tonsils were removed October 24, 1926. On June 6, 1927, or seven months later, some improvement had taken place. The amplified whispered voice was heard distinctly. The average hearing for tones in the right ear was 71.7 per cent, in the left was 69.5 per cent, whereas the previous tests showed 65.9 per cent in the right, and 66.2 per cent in the left.

CASE 4.—Shows a typical conductive case with typical findings. The right ear averaged 66 per cent for the tones, the left averaged 72.6 per cent. Tonsils and adenoids were removed August 27, 1926. The next test, made fifteen months later, shows an average of 71.8 per cent for the right and 89.3 per cent for the left, or an average improvement of 5.8 per cent for the right and 16.5 per cent for the left. On November 28, 1927, the patient had an attack of mumps. On January 28, 1928, another test was made and it was found that the right ear showed 59.4 per cent average total hearing or a decrease of

12.4 per cent, and the left an average of 71.8 per cent, or a decrease of 17.5 per cent. This illustrates how the hearing defect can result from a toxemia produced by an infectious disease.

CASE 5.—Is representative of a very severe type of mixed conductive and perceptive impairment. The amplified voice was heard only fairly distinctly in both ears. The lower tones were most affected. The upper limit was 13,000 d.v. in both ears, the bone conduction was slightly below normal in the right and slightly above in the left ear. Tonal average for the right was 44.2 per cent, for the left 40.6 per cent. Tonsillectomy and adenoidectomy were done April 7, 1926. Test made on July 7, 1927, exactly fifteen months after operation, shows an improvement average of 24.8 per cent in the right ear and 21.1 per cent in the left, or more than 50 per cent increase of the original hearing.

CASE 6.—Is a case of conductive impairment which was much worse one year after operation. The onset came on suddenly during acute mastoiditis two years before. There is a loss of 6 per cent in the right and 18.8 per cent in the left ear. The patient was found to have a chronic purulent posterior ethmoidal sinusitis for which she is being treated, in the hopes of clearing up the hearing impairment.

COMMENT

In general it has been considered that the removal of tonsils and adenoids was beneficial to hearing. Precise measurements have shown us that this improvement was more marked than suspected. In other words we did not know that the hearing was benefited to such a degree.

One gets the impression from the limited work here presented that in the future we shall find that a not inconsiderable number of cases of incipient deafness can be arrested. Of one thing we are sure, and that is that the best way to "cure deafness" is to prevent it.

1116 Wilshire Medical Building.

DISCUSSION

FRANK H. RODIN, M.D. (490 Post Street, San Francisco).—If we are to secure any improvement in impaired hearing it is necessary to remove the cause as early as possible. As Doctor Gundrum has stated: "The greatest increase was generally in inverse ratio to the age of the patient; the younger the patient, the greater the benefit." Early stages in defective hearing are not often noticed by either parents or teachers. As Doctor Gundrum has observed: "The parents thought the child 'inattentive,' whereas a real hearing impairment was the cause of the 'inattention.'"

The Western Electric Company's phonograph audiometer, by which forty children can be tested at one time, makes it possible to find early the cases having defective hearing. In San Francisco 30,742 school children were examined with the phonograph audiometer and 2782, or 9 per cent, were found to have a loss of nine or more sensation units in one or both ears. A sensation unit corresponds to .83 of 1 per cent hearing loss for speech. Of these 751 were found to have some correctible ear defect. Four hundred and five children had such a marked loss of hearing that they were recommended for lip-reading instruction. It is by finding early the children with a hearing defect that we may reduce the number requiring lip-reading and prevent deafness, with fixed changes in the ears, later in life.

Pediatricians and otologists have known of the remarkable improvement in hearing that may take place after the removal of tonsils and adenoids. As far as I know, Doctor Gundrum is the first to actually study such cases with an audiometer before and after a tonsillectomy and show graphically the improve-

ment that may be obtained after the removal of infected foci in the upper respiratory passages.

Of course not every child with defective hearing will improve on the removal of the tonsils, but every child who has a hearing loss should have a careful physical examination to determine if possible the cause of the condition. An examination which includes the study of the lower and upper tones, as suggested by Doctor Gundrum, is often helpful in determining whether the cause is due to an upper respiratory condition or to some other focus of infection.

Doctor Gundrum is to be commended for drawing the attention of the pediatricians to the fact that an early defect of hearing can readily be detected and often improved surgically.

F. F. GUNDRUM, M. D. (Medico-Dental Building, Sacramento).—Doctor Gundrum's paper is timely. It brings again to our attention the great desirability of instituting preventive measures in childhood where opportunities for correction are so much greater than in the adult. It seems to me that any method which allows for an earlier appreciation of developing handicaps is to be received with approval and its use extended.

THE LURE OF MEDICAL HISTORY

JOHN BOSTOCK (1773-1846)

Author of the First Clinical Description of Hay Fever

By SAMUEL H. HURWITZ, M. D.
San Francisco

ON March 16, 1819, Dr. John Bostock, an English physiologist and clinician, read a paper before the Royal Medical and Chirurgical Society of London on a "Case of a Periodical Affection of the Eyes and Chest"¹ in which he presented to the members the history and clinical symptoms of a seasonal affection which had troubled him since childhood. Nine years later² he gave a more detailed account of the disease, applying to it the noncommittal name of "catarrhus aestivus" or summer catarrh, although the affection had, since his earlier publication, obtained the popular name of hay fever.

The recognition of hay fever as a clinical entity dates from Bostock's description of his own symptoms, a fact which has been recognized by the German school in giving to hay fever the designation, Bostock's catarrh. Even though Bostock's achievement is somewhat dimmed by his failure to discern that pollen was the cause of hay fever, the credit for its first clinical recognition justly belongs to him. It is very doubtful whether certain forms of seasonal catarrh described by medical writers in the sixteenth, seventeenth, and eighteenth centuries were genuine instances of hay fever. The cases of Botallus of Pavia (1565) and Binningerus (1673) are often referred to in the literature in support of the view that hay fever was first described several hundred years before Bostock. The former tells of patients who had an intense aversion to roses, since their odor caused them headache, itching of the nose and sneezing, and the latter reports the case of a woman who every year, for a period of several weeks, had symptoms of coryza when the roses bloomed.³ Although it is highly probable that hay fever had occurred long prior to the time when it was first



JOHN BOSTOCK, M. D.

noticed by medical writers, it appears to have been mistaken as a mere modification of the common catarrh. This is not remarkable when one reflects that up to the time of Sydenham, in the seventeenth century, rheumatism and gout had been regarded as one and the same disorder and that these diseases have less similarity and are more distinct in their characteristics than are hay fever and common coryza.

Bostock, who was somewhat of a medical historian himself, states in his paper: "One of the most remarkable circumstances respecting this complaint is its not having been noticed as a specific affection until within the last ten or twelve years. Except a single observation of Heberden's, I have not met with anything that can be supposed to refer to it in any author, ancient or modern." The observation of Heberden to which Bostock refers is to be found in his Commentaries, that great mine of keen medical observation which was the result of a lifetime of conscientious note-taking.⁴ Speaking of this form of catarrh, Heberden states: "I have known it to return in four or five persons annually in the months of April, May, June, or July, and last a month with great violence."

Although the name of John Bostock will be remembered for his clinical description of hay fever, it is for his contributions to physiology and physiological chemistry that he was held in high esteem during his lifetime. Pettigrew,⁵ in his Biographical Memoirs, has given an excellent narrative of the life and work of John Bostock. Born in Liverpool in 1773, Bostock followed in the footsteps of his father, a practicing physician in that city. In his twentieth year he commenced the study of medicine by spending some time with an

apothecary in order to become familiar with pharmacy; and afterward by attending the practice of the Liverpool General Dispensary. After several years devoted to the study of anatomy in London and of chemistry in Edinburgh, he took his medical degree at the latter university in 1798, when twenty-five years of age. His thesis on this occasion was upon secretion. On leaving Edinburgh Bostock settled in his native town and was elected one of the physicians to the Liverpool General Dispensary and, with Dr. James Currie, an eminent practitioner of that city, took an active part in planning and establishing the Fever Hospital. It would appear, however, that he devoted more time to the study of botany, physiology and chemistry, and to the writing of many papers for vari-

tion of his "Inquiry into the Causes and Effects of the Variolae Vaccinae" and, although it was already fully appreciated that no discovery in medicine was more important to the interests of humanity, yet its practical application in England, as in our country today, was far from general. If Doctor Bostock was present at the meeting of the Medical and Chirurgical Society on November 10, 1819, he heard his colleague, Sir Gilbert Blaine, read a paper on the value and present state of vaccination, in which he stated that "it is one of the reproaches of the country that it has not availed itself so much as any other, of the benefits of vaccination."

When Bostock came to London in 1817, two of John Hunter's famous pupils, Abernethy and Astley Cooper, both in their fifties, were at the height of their careers. The latter had already been surgeon at Guy's Hospital for seventeen years, where he made his epoch-making contributions to the surgery of the vascular system, and Matthew Baillie, who twenty-five years before had written his famous "Morbidity Anatomy," was now physician to George III, one of the busiest consultants in London and the last to inherit the "Gold-Headed Cane."

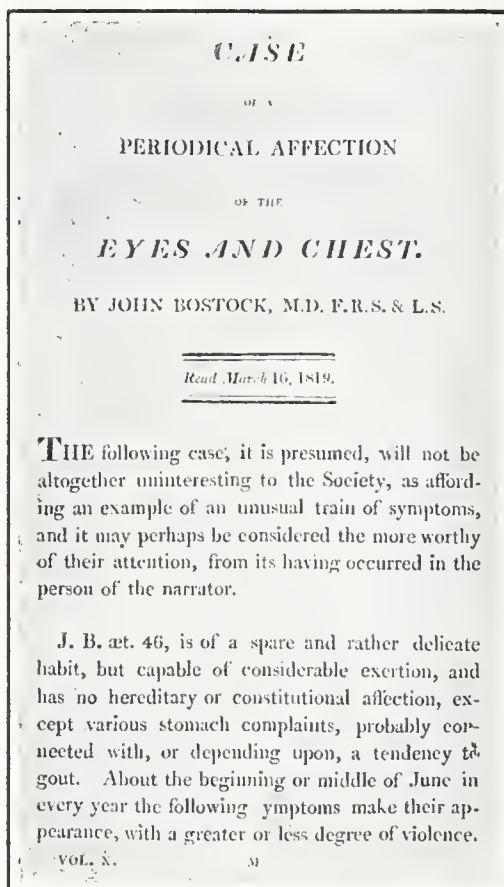
As one of the lecturers on chemistry at Guy's Hospital, Bostock had an opportunity to know intimately two of its brilliant young physicians, Thomas Addison and Richard Bright; the latter became physician to Guy's Hospital in 1820, where he worked for six hours daily in the wards and postmortem room, efforts which were crowned in 1827 by his original description of essential nephritis, which made the name of Bright a household word throughout the world. Doubtlessly stimulated by Bright's work on nephritis, Bostock made chemical analyses of the properties of the urine in many patients with Bright's disease, and he was the first to discover the presence of an excess of urea in the blood of patients suffering from certain diseases of the kidneys.⁵

Bostock's most noteworthy contributions were made in physiology. His work entitled "An Elementary System of Physiology," published in London in 1823, passed through three editions and was the first systematic and connected view of modern physiology that had been published in England. This and his numerous researches on the chemistry of the body fluids show him to have been "characterized by a bold and ingenious spirit of inquiry."

490 Post Street.

REFERENCES

1. Bostock, John: Case of a Periodical Affection of the Eyes and Chest, Medico-Chirurgical Transactions, London, 1819, x, 161.
2. Bostock, John: Of the Catarrhus Aestivus, or Summer Catarrh, Medico-Chirurgical Transactions, London, 1828, xiv, 437.
3. Koessler, K. K.: The Specific Treatment of Hay Fever (Pollen Disease); Forchheimer's Therapie of Internal Diseases. New York and London. D. Appleton and Company, 1920.
4. Heberden, Guil: Commentarii de Morborum Historia et Curatione, Londini, 1802.
5. Pettigrew, Thomas, Joseph: Biographical Memoirs. Whittaker and Company, London, 1839.



ous medical and scientific journals than he gave to practice. In fact in 1817 he gave up the practice of medicine and determined to devote his attention more particularly to the study of physiology. At the age of forty-four he moved from Liverpool to London. In making this change he was principally influenced by the greater facilities which the metropolis afforded for the pursuit of his chosen work, and for the enjoyment of the society of his scientific friends.

The London group of physicians into whose circle Bostock now entered were among the most famous of the century. The roster of the Royal Medical and Chirurgical Society of that time contains such names as Jenner, Astley Cooper, Matthew Baillie, Abernethy, Benjamin Brodie, Charles Bell, Thomas Young and the "great men of Guy's," Richard Bright and Thomas Addison. Jenner was at that time sixty-eight years old. About twenty years had elapsed since the publica-

CLINICAL NOTES AND CASE REPORTS

MESENTERIC CHYLOUS CYST*

REPORT OF CASE

By EDWARD J. LAMB, M. D.
Santa Barbara

THE article, "Mesenteric Chylous Cysts," printed in the April 1929 edition of CALIFORNIA AND WESTERN MEDICINE, by Dr. L. A. Alesen, has prompted me to report the following case.

The etiology of chylous cyst is obscure, the occurrence of these cysts is rare, and the signs and symptoms at present are not well defined.

Considering the rarity of this condition the following case is reported:

REPORT OF CASE

History.—Mario B., white male, age five years, born of Italian parentage, first seen in consultation with Dr. Hugh Freidell on December 15, 1928. The family history was essentially negative. The parents were in good health. There was no history of miscarriages or any familial chronic diseases.

The patient was a full-term baby, normal birth, neonatal and infantile health was good. The patient had had an attack of abdominal cramps and some abdominal distention about one year ago from which he recovered without medical aid. The child gave no history of intestinal indigestion.

Physical Examination.—A well-developed and fairly well nourished child five years of age, tossing about in bed, suffering from excruciating pains located in the region of the umbilicus. The child was holding his hands on the abdomen as if suffering from severe abdominal cramps, and periodically shrieked with pain. Temperature, 100. Pulse, 98. Respiration, 20. Chest examination negative. Abdomen greatly distended, tympanitic on percussion. No abdominal spasm, slight rigidity, and well-marked tenderness over the entire abdomen. Liver and spleen were not palpable. Rectal examination negative. Extremities in no fixed position. Reflexes were normal.

Laboratory Findings.—White blood count: 25,600 with polymorphonuclear neutrophils 89 per cent; large lymphocytes, 4 per cent; small lymphocytes, 5 per cent; large mononuclears, 2 per cent. Urine, catheterized specimen: albumin trace; sugar, slight trace; acetone, heavy trace; diacetic acid, heavy trace; no pus cells or other microscopic findings.

Diagnosis.—General peritonitis, secondary to strangulation or intussusception of bowel.

An exploratory laparotomy was performed by Dr. M. Thorner.

Operation.—(By Doctor Thorner) "Anesthesia under gas ether. Right rectus incision was made. No free fluid was found, but a cyst of large size, fully a litre, presented, which proved to be a cyst of the mesentery of the lower part of the jejunum, which separated the leaves of the mesentery up to the bowel and completely flattened out the jejunum like a ribbon over its circumference. The mesentery was twisted with ecchymotic areas, with the cyst lying across and compressing the transverse colon. The entire colon was considerably congested though there was no free fluid in peritoneal cavity and no gangrene of intestines. Appendix was found not outwardly inflamed and was ablated. Cyst was excised together with intervening collapsed jejunum. Both ends of jejunum were closed and a lateral anastomosis was made.

Abdominal wound closed without drainage. Hypodermoclysis of normal salt solution was administered. Patient stood the operation well. Was given hypertonic salt solution (3 per cent) and glucose per rectum.

"On December 16 was seen in the morning. Pulse good; and patient's condition was apparently good at 9:30 o'clock. Urine, only two ounces, obtained by catheterization, contained acetone and diacetic acid. One-half an hour later when seen, patient was in collapse and died at 4 p. m."

Pathological Report.—(R. D. Evans, M. D.) Gross: The specimen is a partially distended cyst containing five lobules, which are in communication with one another at a central point. Over all the cyst is 20 by 20 by 5 centimeters. The wall is gray brown, translucent, smooth, and thin. The fluid is golden yellow, and contains yellow droplets which glisten in the light. It contains approximately 1000 milliliters. Gram-stained preparations of the fluid showed no evidence of the presence of any bacteria.

The appendix vermiformis is eight centimeters long, serosa pink gray, lumen patent, and mucosa red. Coursing over the surface of the sac is a strip of small bowel ten centimeters in length in the collapsed state; and the two ends of this are tied close together in the pedicle. Bowel is five centimeters in circumference, and its lining is somewhat smooth.

Diagnosis.—Mesenteric cyst.

1515 State Street.

ADENOCARCINOMA IN A FOURTEEN-YEAR-OLD BOY*

REPORT OF CASE

By ANDREW S. DAVIS, M. D.
Oakland

CANCER in youth and adolescence is rare. Students of medicine are so imbued with the idea that cancer never occurs before forty that such is accepted as a maxim. This erroneous view is directly responsible for many unsuspected lesions being first diagnosed at operation or necropsy. Adenocarcinoma does occur at relatively early ages, being the tumor of most frequent occurrence during the second decade of life, and of less prominence during the third.¹ Hennig² observed twelve cases among one million living children under the age of fifteen years; and subsequent to his observations, twenty-one instances have been reported in the literature occurring under fifteen years of age.

The colon is the common site of malignant growths in the digestive tract; the rectum being the site most often of true cancer. Five and a quarter per cent³ of all carcinomas occur in the rectum. This figure places the rectum as fifth in the list of primary seats of cancer.

Transient injury is oftentimes given as a possible etiologic factor in reports on adenocarcinoma. It is very doubtful if malignant changes ever result from a single trauma, although they may follow continuous or repeated irritation to a definite structure.

A generation ago the laity believed that all tumors came from trauma, and every woman with a cancer of the breast remembered when she was pinched or kicked by a nursing infant. Everybody has been subject to many forgotten

* From the Children's Clinic, Santa Barbara.

* Read before the Saint Francis Hospital staff meeting.

* Read before the Alameda County Medical Society, June, 1928.

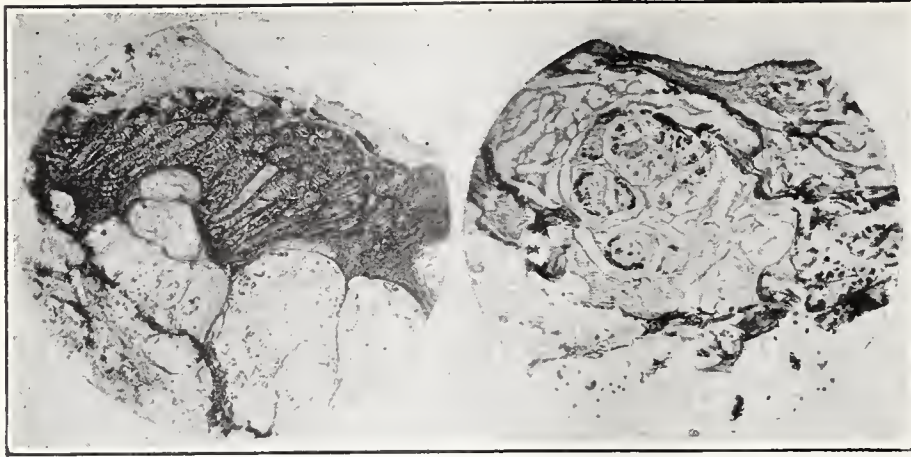


Fig. 1.—Actively growing tumor with epithelial cell nest and marked mucoid degeneration.

Fig. 2.—Malignant invasion in omentum. Cell nest and inflammatory tissue present.

blows, and the trauma to which a cancer is attributed is too often an eagerly remembered incident.

SYMPTOMS

Paramount in symptomatology is: constipation; constipation followed by diarrhea; diarrhea; tympanic abdomen; tenesmus; dull pain; colicky pain; disagreeable feeling in the rectum, back and sacrum; gastrointestinal disturbances; ascites; melena; and acute ileus. Pain may be the first symptom, although one may find instances of rectosigmoid cancer without pain or any other symptom, except in the most terminal stages of the malignant invasion. Macewen's⁴ case of adenocarcinoma had no symptoms up to the night before admission to the hospital when the patient was seized with violent pain in the abdomen and persistent vomiting. An exploratory laparotomy showed an adenocarcinoma with perforation of an ulcerated gut. Death occurred a few hours after operation. In Davis's⁵ report the girl complained of colic in the right lower quadrant and as the colic persisted there developed an increasing tenderness in the region sufficient to warrant an exploratory laparotomy where an adenocarcinoma was found involving the ileocecal region. Three years later the girl was reported as enjoying good health.

The diagnosis is usually made at operation or necropsy. X-ray is not infallible, and digital examination may fail as well. Hence the rectoscope should always be used where there is suspicion of lower bowel malignancy. In the case reported below both x-ray and digital examinations were negative, therefore a rectoscopic examination was not made. Rectoscopy would no doubt have established a correct pre-operative diagnosis.

TREATMENT

Surgery is the only satisfactory treatment, and it is not effective except when the

condition is discovered in its incipency. The use of the x-ray and radium are still in the experimental stage.

REPORT OF CASE*

History.—W. W., male, 14, entered Saint Luke's Hospital November 23, 1926, complaining of umbilical pain of one week's duration coming on immediately after having eaten. Four days later the abdomen became rigid and distended, associated with costiveness. Family history negative for cancer and tuberculosis. The history of a blow in the abdomen twelve days before while playing football was elicited.

Physical Examination.—Pupils dilated, reaction equal. Face flushed. Superclavicular glands palpable, abdomen pendulous and rigid. Pain on palpation in the umbilical region and to right of umbilicus. There was a shifting dullness on percussion. Rectal examination showed only a large amount of impacted feces. Tentative diagnosis: Tuberculous peritonitis with ascites.

Approximately eleven litres of fluid were withdrawn in nine days. The abdomen flattened and on palpation a large round but irregular hard mass occupying the region between the symphysis and navel was palpated; other irregular masses indefinitely palpable in left inguinal and right cecal regions. Mass felt like a new growth, and its location could be determined probably by a barium enema.

Blood findings: Hemoglobin, 76 per cent (Dare); erythrocytes, 4,670,000; leukocytes, 7600; neutrophils, 68; lymphocytes, 32. Urine specific gravity, 1.030. Special examination: Aspirated fluid was injected into guinea-pig. Ten days later on autopsy, the guinea-pig showed no evidence of tuberculosis.

X-ray of chest negative. Fluoroscopic examination of injected barium was negative.

Operation.—Exploratory laparotomy, December 6, 1926. Median incision, approximately 2.5 litres of fluid escaped. Enlargement of the opening exposed a large mass extending down to the lower angle of the wound and attached to the parietal peritoneum on the left side. Mass extended across the whole upper abdomen and was attached to parietal peritoneum which was also studded with very fine nodules. On right side the mass was apparently free and could be outlined. In the right lower quadrant it seemed to extend

* Reported through the courtesy of John F. Sullivan, San Francisco.

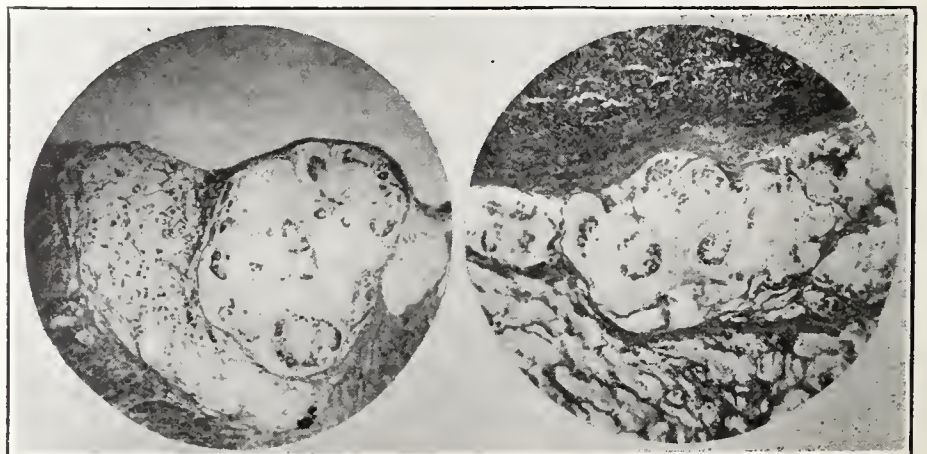


Fig. 3.—Lymph gland with large metastatic invasion showing characteristic cell nest, typical mucoid material and many mitotic figures.

Fig. 4.—Typical cell nests buried deep in muscularis surrounded by zone of mucoid material.

downward and inward to be reflected back upon the cecum. Several nodules were felt in the rectum, and from the lower angle of the wound a greater number of nodules seemed to extend over the bladder and were adherent to this viscus. One nodule was removed for examination and the abdomen closed. Frozen section: Adenocarcinoma. Died June 3, 1927.

Autopsy, June 4, 1927.—A large mass in the bowel filled the true pelvis. The organs were removed en masse and dissected. At the junction of the sigmoid-colon and rectum there was found an ulcerated area with some calcified material beneath the ulcer; also a tumor mass underlying the ulcer. Extension could be seen from this ulcerated area out into the parietal tissue. The bladder was infiltrated but negative. Both ureters were caught in the tumor mass and show a marked distention on both sides, being dilated about one centimeter each. Kidneys were normal in size and shape, capsule stripped easily and left a fairly smooth surface. Kidney showed normal differentiation on section. Histological examination showed the tumor mass to be an adenocarcinoma—mucoid type.

Diagnosis and Pathological Report.—Rapidly developing and fatal adenocarcinoma—mucoid type—of the rectosigmoid junction in a male, age fourteen years, the chief symptoms being abdominal pain, distention (ascites) and constipation.

COMMENT

This case of an adenocarcinoma of the sigmoid and rectum in a fourteen-year-old boy represents the twenty-second case under fifteen years of age. Twenty-one cases of adenocarcinoma of the large bowel have been previously reported in children.

There are fifty-five cases of cancer of the rectum and sigmoid reported in the literature in patients under twenty years of age.

Surgical treatment in early cases, as with most types of malignancy, offers the best hope for cure, but because of the lack of early subjective symptoms the diagnosis is rarely made until too late.

Single trauma is not regarded as a direct etiologic factor.

In the case reported above the boy received a severe blow in the abdomen while playing football. Could trauma have been transmitted to the sigmoid from a blow in the abdomen, or a malignant growth have developed and metastasized in four weeks' time to the extent described in the findings at necropsy? Although the fulminating character of cancerous growths found in youth is startling, it is highly improbable that there is any relationship between the trauma of the football game and the adenocarcinoma found at the operation or autopsy.

9311 East Fourteenth Street.

REFERENCES

1. Ewing, James: *Neoplastic Diseases*, W. B. Saunders Co., Philadelphia, 3rd ed., 1927, p. 698.
2. Hennig, Carl: *Lehrbuch der Krankh. des Kindes*, Leipzig and Heidelberg, C. F. Wintersche Verlags-handlung, 1864, p. 503.
3. Ewing, James: *Neoplastic Diseases*, W. B. Saunders Co., Philadelphia, 2nd ed., 1922, p. 710.
4. Macewen, J. A. C.: Adenocarcinoma of the Small Intestine, *Lancet*, 1:693, April 8, 1922.
5. Davis, C. B.: Adenocarcinoma in a Girl of Nine-teen with Extensive Gland Involvement, *Surg. Clin. N. America*, 1:1047.

COCCIDIOIDAL GRANULOMA

REPORT OF CASE

By GEORGE S. KALICHMAN, M. D.

AND

LEO J. MADSEN, M. D.

Santa Monica

COCCIDIOIDAL granuloma is still, fortunately, a comparatively rare disease in man. The diagnosis is difficult for one who has never seen the disease. The condition is often confused with tuberculosis. The report of this case, with a few preliminary remarks, would seem to be justified.

The parasite of coccidioidal granuloma was first described by Rixford and Gilchrist in 1899. It is a granulomatous pyogenic disease, due to infection with the fungus, *Coccidioides immitis*, probably a member of the Oömycetes group. Walbach and others, by cultivating the *Coccidioides immitis*, showed that the original view that the parasite belonged to the protozoan group, as held by Pasadas, was erroneous.

The diagnosis of the disease is usually difficult. Like other granulomatous diseases, it may mimic anything. Jacobson calls attention to various clinical forms or types such as cutaneous, systemic, osseous, and pulmonary. When associated with ulcers or sinuses, repeated cultures, smears or scrapings, will usually reveal the spherical bodies of *Coccidioides immitis*, with their characteristic refractile, double-contoured capsules.

The prognosis is as a rule fatal, but death may not ensue for months or even years.

There is no specific treatment for this disease. Vaccines have been prepared by J. V. Kovke and Karl Meyer, but their results were not encouraging. Jacobson of Los Angeles recommends the intramuscular injection of colloidal copper, and is very enthusiastic about its effects in checking the disease.

REPORT OF CASE

P. C. M., thirty-three years of age, Spanish by birth, cement finisher by trade. Interesting features of the family history are that his mother and two sisters died of pulmonary tuberculosis. His mother died three months after his birth. Four brothers are alive and well. Patient was gassed during the World War, but evidently without apparent damage to the lungs.

Present Illness.—The patient was first seen on October 23, 1927. A history of bronchopneumonia, from September 17 to October 10, was given. Normal temperature followed, but the fever returned. The character of the temperature was septic, reaching its apex at 8 p. m., when it was 103, and at times 104 degrees Fahrenheit. During the day his temperature ranged from 100 to 101 degrees Fahrenheit.

Physical Examination.—A decidedly toxic-looking man of about thirty-five years of age. Skin dry, brown in color. A few punched-out encrusted ulcers about 2 by 4 centimeters or approximately the size of a quarter, round or oval in shape, could be seen on the face, thorax, and one on the right leg.

The patient stated that these ulcers began as small nodules at the onset of his illness and gradually increased in size, then slowly ulcerated, discharging a

substance resembling thin pus. Later the ulcers became encrusted with a gummy necrotic scab.

The remainder of the physical examination was practically negative, except for the slight dullness on the base of the right lung and a few dry râles over both lungs. There was some sensitiveness in the upper right abdominal quadrant. Spleen was not enlarged. Pulse was weak but regular.

The character of the temperature and the toxic look suggested typhoid or paratyphoid. The Widal examination for both typhoid and paratyphoid A and B was negative. The x-ray examination of the chest was negative. Repeated blood cultures were negative. Blood count: leukocytes, 15,000. Differential blood count: leukocytes, 14 per cent; large leukocytes, 2 per cent; polymorphonuclear, 84 per cent; sputum examination, streptococci fairly numerous; pneumococci few. No other organisms identified. Urine examination was repeatedly negative.

The working diagnosis at this time was: Septicemia with possible miliary tuberculosis, although the latter was not likely, as the temperature was not of the continued type, and no cyanosis or dyspnea was present.

About November 12 there was noticed a slight bulging in the right seventh intercostal space. Aspiration was done and about three cubic centimeters of pus was withdrawn. The microscopic examination of the pus revealed no microorganisms.

A guinea-pig was injected with the purulent material. In six weeks the guinea-pig had lost sixty grams in weight. Postmortem examination of the pig showed: The peritoneum studded with small grayish-white nodules, which were of a fairly firm consistency. The liver was studded throughout with similar nodules averaging 1 to 2 millimeters in size. The spleen showed a few similar nodules. Smears from crushed nodules revealed no acid-fast bacilli. No stains or preparations were made to search for organisms resembling the yeasts.

The cavity which was discovered in the patient's chest was drained a few days later by the insertion of a catheter. Another x-ray was taken, which was practically negative except for peribronchial thickening. The patient felt improved after the drainage. The temperature dropped to 99 degrees for a few days, but the improvement was only temporary. One week later another x-ray was taken (this time with the use of lipiodol) and a large subphrenic abscess cavity extending deep into the liver was revealed. The lungs and pleural cavity were apparently not involved.

A radical drainage of the subphrenic abscess seemed advisable.

Surgical Report.—Under combined gas and local anesthesia the medial two inches of the seventh and eighth ribs were resected about the sinus. Finger exploration disclosed a sinus leading to the diaphragm. The basal layers of pleura were sutured to the parietal layer of pleura and this in turn to the upper skin margin of wound. The diaphragm was then split transversely until the sinus perforating the liver was found. Exploration of the cavity revealed an abscess within the liver about six inches in diameter. Three Penrose drains and one soft rubber tube drain were inserted, and the skin margins closed with the silk-worm gut. The wound was then irrigated several times daily with one-quarter to one-half per cent Dakin's solution.

Again there was some temporary improvement following the radical drainage of the hepatic abscess, but a few days later the same septic temperature returned. This temperature prevailed until death, which occurred about five weeks after the operation.

Fortunately the patient's family agreed to a post-mortem examination, which was performed by Doctor Kosky, who established the diagnosis of coccidioid granuloma.

Autopsy Report.—Heart and pericardial sac are negative. Pleural cavities: Left is negative. The right

lung is similar to the left in consistency, but is limited in its basal borders by dense fibrous pleura. The right has very dense fibrous adhesions throughout. There is a walled-off sac situated immediately above the diaphragm which is about six centimeters in diameter; the wall of this sac consists of thickened pleura. On the floor of the sac is an opening into the diaphragm, one centimeter in diameter, which communicates with the superior surface of the liver.

Lungs: The left is studded throughout with firm, grayish-white nodules ranging in size from one to three millimeters in diameter. The hilar glands show anthracosis and are somewhat enlarged. Section reveals occasional whitish nodules throughout all the lobes. Smear from nodules in the lungs reveals no acid-fast bacilli.

Liver: About normal size. Scattered over the surface are occasional nodules similar to those found in the lungs. There is a healed scar on the superior surface of the liver next to the opening in the diaphragm. In the substance of the liver below this healed scar about two centimeters, is a bilobed abscess, totaling about four centimeters in diameter, containing yellowish-brown purulent material. It is quite well walled off with a membrane one millimeter in thickness. No other changes noted in the liver.

Spleen: Somewhat increased in size. There is a marked hyperplasia of the Malpighian corpuscles.

Stomach: Markedly dilated. Gastro-intestinal tract otherwise negative. Kidneys are negative. Pelvic viscera are negative.

Smear from the purulent material in the wound of chest revealed numerous spherical, refractile bodies, measuring up to 40 microns in diameter. They have a double lining membrane. Some show sporulating forms within them.

Therapy: The following general hygiene, antipyretics in form of pyramidon, sedatives, and digitol or digalen in the last four weeks, when cardiac weakness was noted. Before the hepatic abscess was discovered the working diagnosis was pyemia, or general septicemia. At that time the patient was given streptococcic immunogen (Parke, Davis & Co.) subcutaneously, and metaphen (Abbott) intravenously.

From the tomato-sauce type of the pus which drained from the liver abscess, and because the great majority of hepatic abscesses are of the amebic type, emetin hydrochlorid was given for a few days. Emetin was discontinued because of its marked cardiac depression. Saturated KI. was given for some time, but seemed to aggravate the process and it was, therefore, discontinued.

SUMMARY

This case seems of interest for the following reasons:

1. The course of the disease was rather rapid, the man being ill about four months.

2. Because in its incipency the condition was considered as a pneumonia by the attending physician.

3. Further, this case brings out the necessity for the use of lipiodol in roentgenograms of suspected abscesses.

4. It demonstrates the necessity of a biopsy of all skin lesions where a diagnosis cannot be made grossly, and further accretuates the need of repeated examinations for yeast organisms whenever pus does not show microorganisms.

5. Most of all, it brings out the need for closer coöperation between pathologist and clinician.

1749 Ocean Avenue.

BEDSIDE MEDICINE FOR BEDSIDE DOCTORS

An open forum for brief discussions of the workaday problems of the bedside doctor. Suggestions for subjects for discussion invited.

HEADACHE

LEROY H. BRIGGS, SAN FRANCISCO.—Headache, like many another symptom of which we know little, might logically be divided into organic and functional. The relatively infrequent organic type usually can be recognized on a proper examination and may be dismissed from this discussion by being classed roughly as follows: (1) Definite structural brain disease, as tumor, abscess, infection, vascular changes and trauma. (2) Infectious, when the headache is the initial symptom of a general infection or else is a focal manifestation, as in syphilis, tuberculosis or meningitis. (3) Disease in structures adjacent to the brain, such as glaucoma, sinusitis, or arthritis of the cervical vertebrae. (4) Nephritis, rarely arteriosclerosis, and more rarely still, blood pressure changes. Incidentally a cerebral anemia from a lowering of existent hypertension is the usual explanation of the latter. (5) With the exception of alcohol and lead, the term "toxic headaches" had better be left to the layman.

Possibly occupying a place between organic and functional, comes that most interesting headache of all, migraine. Easy of diagnosis, impossible of cure, strictly a familial disease that rarely masquerades in any other guise to deceive us, migraine presents a clean-cut clinical entity with definite time limitations for its existence. Occasionally the gastro-intestinal manifestations focus attention on that system, but a proper history will clear up the doubt. From the second decade to the sixth it harasses its victims, usually of the mental rather than the physical habitus, resisting all attempts at cure, finally subsiding just as all hope of surcease is given up. Next to its recognition, the greatest service to be rendered the patients so cursed, is to tell them the true nature of their disease, shield them from enthusiasts who promise a cure from surgery, diet or fad, and so order their lives to make them as hygienically ideal as possible.

True functional headaches constitute the great bulk of our problem, and for want of a better word might be called "neurasthenic headaches." Granting the possible lack of propriety in this term, how else are we going to class the great number of headaches seen in the asthenic and hypertonic individuals, true, often partly due to errors in bodily hygiene, worry, emotional strain, etc.? However, the fact remains that in persons of a different nervous status, similar errors and strain do not produce the headache. Eyestrain, autointoxication, constipation, "indurative headache," how often have we used these terms to the

patient with our tongue in our cheek, simply because we lacked the fortitude or tact properly to tell him the truth about himself? One hates to hear that by birth or training he is not stout enough to bear up under the buffetings of this complicated existence without some show of weakening, and he seeks out that advisor who holds forth the often vain hope of a tangible shortcut and cure, rather than the one who would show him that the sought-for relief lies in a slackening of speed, a better mode of living, or a different philosophy of life. He should be taught the words of Trudeau, that "the conquest of Fate is not by struggling against it, nor by trying to escape from it, but by acquiescence."

It behooves us, therefore, in dealing with headaches, to look on them as a symptom. Search diligently for an organic cause, and consider carefully the history, family and personal, for a possible migraine. Should finally we be satisfied in our mind of the nature of the pain, let us not delude ourselves and our patients into seeking a cure through some fad, but treat the patient himself with the headache, and not the symptom alone.

* * *

WILLIAM DOCK, SAN FRANCISCO.—The headache of organic origin is quite as difficult to explain as that which we consider as functional. Thus, secondary syphilis, without demonstrable meningeal involvement is frequently accompanied by headache, whereas this symptom is only occasionally present in central nervous system syphilis. The headache of fever and of wasting diseases, such as tuberculosis, is also functional and its incidence and severity rarely parallel any other feature of the disease. Even in brain tumor, pain may be entirely absent or occur only with fatigue, indigestion or emotional stress. Most patients with hypertension do not have headache and when it does accompany this disease it may be present only when the blood pressure is higher than the patient's usual level, as in so-called hypertensive crises, or when the pressure is at average levels or abnormally low for a given individual. Low blood pressure also occurs in many patients with migraine or habitual headache, but profound anemia, or actual vascular lesions such as cerebral softening and hemorrhage usually do not cause this symptom. I think it is safe to say that even when we are aware of the organic "cause" of headache, we do not know how the pain is produced or why this particular tuberculous, or hypertensive, or nephritic patient should have a symptom which spares most of his fellows. When organic disease exists, medication

is more rational and more successful than in its absence. Habitual headache often responds to regulated periods of rest, particularly after meals, together with moderate exercise, sensible diet and a fluid intake of over a quart and a half per day. Proper glasses, and especially amber or dark glasses when motoring, exercising or reading in bright weather probably decrease the frequency of attacks oftener than other forms of local medication, but we must gently scan our brother physicians who use more vigorous diets, drugs, surgical and psychic aids, for they do occasionally bring relief to those whom we considered unlikely to be improved by such treatment.

* * *

F. F. ABBOTT, ONTARIO.—Functional, nervous or neurasthenic headache is the diagnosis given in the largest percentage of those who consult the physician for headache. But if the physician goes no farther with his diagnosis, he is sadly neglecting his duty to his patient. Neurasthenia (whatever that may be) is perhaps an underlying cause. That is, a poor nervous heredity may make one more susceptible to headaches or any other functional nervous disorder. We cannot remedy the heredity. Our job is to make life more livable for this individual. So we must search for the exciting or contributing cause of the symptom.

A "neurasthenic" person is not able to carry a full load, and a headache is a warning of an overload. This may be fear, worry, grief, overwork, loss of sleep, sexual excesses or irregularities. Or there may be the overload of chronic foci of infection such as tonsil, tooth abscess, sinus infection, gall bladder, appendix, colon, cervix uteri, prostate, etc. Many a case of nervous headache (as of other functional nervous disorders) has been cured or markedly benefited by clearing up foci of infection.

Some of these cases are victims of an unbalanced diet—excesses in quantity of food beyond the needs of the body. Excess of foods rich in acid ash is a frequent cause of headache. With many people an excess of sweets will inaugurate a headache. I am still old-fashioned enough to believe that many headaches originate from the colon. In a person in whom imperfect digestive processes leave an abnormal amount of putrefying material in the intestine, headaches are frequent and may be relieved by a colocylyster, if this is done before vomiting has begun. The question whether headache is due to a nervous reflex or to toxins may be settled by saying it may be either one or both.

Then, there is the one whose "excess baggage" consists of poisons taken into the system; nicotine, caffeine drinks and other drugs taken in an effort to keep going. Two recent patients with nervous headaches and "nervous breakdown" have been restored to health, and are carrying a full load of life's responsibilities simply by stopping the use of tobacco and coffee. Some of these patients are victims of maladjustment to environment. For example: a young wife—torn

between two loves, for the one she married and the other she didn't. A little wise council to her and to her husband—the road to health mapped out—the headaches have disappeared.

One does not need to be a nerve specialist. The family physician can remedy a case of maladjustment through his intimate knowledge of inner family affairs. The confidence which patients (some of whom he has ushered into the world) have in him, makes for success. Let us not dismiss the patient with the diagnosis of "nervous headache" but treat the patient as a whole.

Another type of nervous headache is the neuralgic headache. Here foci of infection are especially potent causes. Look for impacted third molars; more than one case diagnosed as "Tic douloureux" has been relieved by the removal of an impacted third molar. The high frequency current applied with a vacuum electrode will give marked temporary relief.

When temporary relief can be obtained by physiotherapeutic methods, analgesic drugs should be avoided. Too many patients have wrecked their health completely by resort to headache tablets or "bromo."

Finally, always be prepared to change your diagnosis, should new symptoms arise. How often has a supposed functional headache turned out to be due to a definite organic cause or infection!

Tuberculosis "Cures" Now Rare, After Federal Action.—Drug cures for tuberculosis have become a rarity in the interstate commerce of medicinal preparations, according to officials of the Food, Drug and Insecticide Administration, United States Department of Agriculture, who are charged with the enforcement of the Federal food and drugs act.

Records of the administration show that 181 so-called "cures," "remedies," and "treatments" for tuberculosis have been proceeded against in court since the food and drugs act was made effective in 1907. Notices of judgment, numbering 358, have been issued against the 181 "cures."

So effective has been the work of the administration in removing this class of drug products from the market that today there are but few medicinal preparations for which their makers make claims of curing tuberculosis, or even mention tuberculosis in the labeling.

Several consignments of an "external tuberculosis remedy" were seized recently and court action is now pending against them. The makers of this product claim to cure tuberculosis by applying the mixture three times daily to throat, chest, back and sides.

"Tu-Ber-Ku," "Tuberculoids," "Tubercleicide," "Lunga Heala," "Lung Healer and Body Builder" are the names of only a few of the alleged tuberculosis cures which have been removed from the channels of interstate drug trade by the Food, Drug and Insecticide Administration.

Tuberculosis is almost universally present in adults as a latent infection. To keep this tuberculosis infection inactive, medical authorities advise a proper amount of work, recreation and rest, a proper amount and quality of food and fresh air. Any drugs, or combination of drugs, bearing curative claims for tuberculosis, are in violation of the Federal food and drugs act, say the officials of the administration. As such, they will be seized and legal action taken to prohibit their sale.—U. S. Dept. of Agriculture, Press Service.

California and Western Medicine

Owned and Published by the

CALIFORNIA MEDICAL ASSOCIATION

Official Organ of the California, Utah and Nevada Medical Associations

1016 BALBOA BUILDING, 593 MARKET STREET, SAN FRANCISCO

Telephone Douglas 0062

Editors } GEORGE H. KRESS
 } EMMA W. POPE

Associate Editor for Nevada HORACE J. BROWN

Associate Editor for Utah J. U. GIESY

Subscription prices, \$5.00 (\$6.00 for foreign countries); single copies, 50 cents.

Volumes begin with the first of January and the first of July. Subscriptions may commence at any time.

Change of Address.—Request for change of address should give both the old and the new address. No change in any address on the mailing list will be made until such change is requested by county secretaries or by the member concerned.

Advertisements.—The journal is published on the seventh of the month. Advertising copy must be received not later than the 15th of the month preceding issue. Advertising rates will be sent on request.

Responsibility for Statements and Conclusions in Original Articles.—Authors are responsible for all statements, conclusions and methods of presenting their subjects. These may or may not be in harmony with the views of the editorial staff. It is aimed to permit authors to have as wide latitude as the general policy of the journal and the demands on its space may permit. The right to reduce or reject any article is always reserved.

Contributions—Exclusive Publication.—Articles are accepted for publication on condition that they are contributed solely to this journal.

Leaflet Regarding Rules of Publication.—California and Western Medicine has prepared a leaflet explaining its rules regarding publication. This leaflet gives suggestions on the preparation of manuscripts and of illustrations. It is suggested that contributors to this journal write to its office requesting a copy of this leaflet.

EDITORIALS

BETTER HEALTH FOUNDATION

California has taken another advanced step in public health promotion. Better Health Foundation, a non-profit, non-stock California corporation, is the name of a new merger which brings together forces representing many important health activities. Articles of incorporation have just been filed and the officers of the Foundation are: Dr. Reginald Knight Smith, president; Dr. Langley Porter, first vice-president; Dr. James W. Ward, second vice-president; Hartley F. Peart, executive vice-president; Dr. John Gallwey, treasurer; Dr. Charles D. McGettigan, comptroller. Directors—Drs. William Palmer Lucas, Walter F. Schaller, O. D. Hamlin, Dudley Smith, W. P. Read, Ferdinand Stabel, Harold Brunn and Celestine J. Sullivan, director of information service.

Dr. W. B. Coffey, chairman of the executive committee, aptly describes the Foundation as “a philanthropic clearing house—the first non-profit non-stock corporation organized for the health profit of the public.” The corporate seal of Better Health Foundation crystallizes its mission in these words: “For the Commonwealth and Commonwealth.”

The Foundation will take over Better Health Service, hospital betterment work and other activities of the League for the Conservation of Public Health and expand the constructive program of health education. Authoritative, well-directed ed-

ucational publicity, such as the League has been conducting for the past eleven years, is one of the most effective weapons we have in curbing preventable diseases and reducing the patronage of quackery. The practical value of scientific medicine and all allied sciences is equivalent to the amount that the public understands and will accept and practically apply. Science is far in advance of its general appreciation and application, and ignorance of and indifference to facts pertaining to individual and community hygiene, based upon the physical sciences, the biological sciences and the social sciences, are responsible for many preventable diseases, which are the greatest wasters of life and health. The great advances of science can be applied in the most effective way for the promotion of health and the reduction of preventable disease by the coöperation of all factors—the agencies of scientific medicine, the public, and an efficient central information service such as is now established by Better Health Foundation. The awakening of the public to the need of protecting their bodies and minds and to bring the messages of scientific medicine to the daily attention of the average newspaper reader is a service of great importance. Health and disease conditions are not only matters of personal importance, but they exert far-reaching influence upon the collective social and economic life of the state. Unused knowledge is useless. Continuous public health education is necessary so that practically everyone will learn what scientific medicine can do for them and how to apply its scientific lessons in making life healthier, happier and more efficient.

Eight different classes of membership are provided for by Better Health Foundation, embracing persons whose education, good judgment and practical experience in various specialized fields of health conservation and scientific research work equip them to undertake impartial studies and fact-finding surveys for the Foundation; owners, executives and administrators of institutions, corporations interested in facts pertaining to disease and accident prevention in industry, hospitals interested in hospital betterment, etc. All interested in any phase of this constructive health program will be given an opportunity to contribute small or large amounts to help carry on the beneficent work of the Foundation. All of the money raised whether from donations of philanthropists or dues of members will be devoted to constructive work as none of the directors as such receive any compensation, salary or profit in any form. Busy as these eminent men are with their manifold and diverse functions they have found time to organize and conduct this Foundation to help solve problems that endanger the health and happiness of homes, that handicap educational, civic and commercial progress, that retard the mental, physical, material and spiritual advancement of society. The high professional standing of the men who have established Better Health Foundation after eleven years of valuable experience and altruistic effort through the League may be accepted as conclusive evidence of sustained interest in a needed work and ability to perform that work well.

Whole-hearted cooperation of the public is assured.

Philanthropists, in many striking instances, have given great sums of money for purposes, institutions and organizations that are no longer practical. Having in mind many frozen funds and inoperative endowments that were established for transitory needs, and that unwise bequests and endowments may create dangerous problems instead of conferring benefits on a community, the officers of Better Health Foundation will supply accurate information to philanthropists who desire to make endowments, bequests, donations or contributions to enterprises, institutions, agencies or special work of practical value in solving vital problems, so that the gift may be serviceable and not impractical, so that foresighted philanthropy may meet scientific and economic developments and keep step with ever-changing standards, customs, laws and living conditions. The basic virtue of this plan is that it establishes a disinterested and competent body to whom men with money to give may turn for impartial information.

Better Health Foundation will open up many new avenues of service and the people of California will receive lasting benefits from its program of practical idealism.

A BIRD'S-EYE SURVEY OF C. M. A. MEMBERSHIP FIGURES

What Constitutes Eligibility to County, State and National Medical Societies?—Organized medicine in principle, aims to include every eligible doctor of medicine within its fold.

An eligible practitioner is a doctor of medicine: holding his degree from an acceptable school of medicine; who is duly licensed in the state; who affirms he is a practitioner of non-sectarian medicine; and who is honorable and ethical in his relations with his colleagues and the lay public as laid down in the precepts and codes of the profession.

Possessing such qualifications, which in the new California Medical Association Constitution and By-Laws are more specifically outlined in Article IV and in Chapter I, such an eligible practitioner can be elected to membership in the component county society of the county in which he resides. He thus automatically becomes a member of the state association and also a member of the American Medical Association. Through the payment of the five dollar yearly dues of the national association, he becomes a Fellow of the American Medical Association, and receives without further cost, the weekly publication of the national organization, the *Journal of the American Medical Association*.

* * *

Important that Eligible Practitioners Should Become Members.—It is highly important, in the troublous, propagandist times which nowadays are seemingly everywhere in evidence, that the component county societies should be alert to their responsibilities concerning eligible practitioners, who, for various reasons, have not affiliated them-

selves with organized medicine. It is to be remembered that those who should be with us but who are not, are through such nonaffiliation not only apt to be not of us, but actually against us. The quiet nonaffiliation or outright nonmembership antagonism of reputable eligible practitioners nullifies the organization efforts of about the same number of practitioners who are members. In other words not to have all eligible practitioners as active members in organized medicine makes for wastage in effort, and somewhat lesser prestige and influence. Such a policy is self-evidently not a very sensible one.

* * *

Membership Figures of the California, Utah and Nevada Medical Associations.—The California, Utah and Nevada Medical Associations measure up to a fair average, when their total membership is compared to the total number of licensed doctors of medicine within their commonwealths. Nevertheless, the organization development has by no means reached its highest possible level in these three state organizations. Their officers and those of the component county societies must continue to survey their respective fields and make continued efforts to bring into affiliation all nonmembers who are eligible. This subject was discussed in the January 1928 issue of this journal, page 81, and county society officers who are interested in their responsibilities in this field of work may find therein some suggestions worthy of consideration.

* * *

Official State Examining Board Figures for California.—In the correspondence column of the June 1929 issue of CALIFORNIA AND WESTERN MEDICINE, page 453, was printed a letter from Doctor C. B. Pinkham, secretary of the California Board of Medical Examiners, wherein he gave the information that 9702 doctors of medicine have licenses to practice in California. About 1701 of these practice in other states. That leaves 8001 doctors of medicine residing in and eligible to practice in California. Of the total 9702 doctors of medicine licensed to practice in California, Doctor Pinkham in a subsequent letter stated that about 700 or 800 were homeopathic and about 400 were eclectic graduates.

From these figures it would appear that there are therefore about 8502 doctors of medicine who were graduates of nonsectarian schools of medicine. The total membership of the California Medical Association as given in the 1929 year book register was 4624, leaving about 3874 licensed doctors of medicine in California who were not members of the C. M. A. Between 2500 and 3000 of this last number of nonmembers are in active practice in the state. It must be self-evident that a goodly number of these nonmembers possess the qualifications that would make them eligible to membership in the component societies of the counties in which they reside. The best interests of organized medicine indicate that the component county societies should make surveys to determine who are the eligible practitioners among nonmember doctors of medicine.

An Analysis of Membership and Nonmembership Figures by California Counties.—In compiling the figures given below, the writer took the statistics given in the Directory of the California Medical Association of 1929, and in the Directory published by the Board of Medical Examiners of the state of California of date of March 3, 1928. An inspection of the figures showing total number of licensed practitioners in each county, total number of members and nonmembers, and the percentage of members to the total number of licensed doctors of medicine for the different county medical societies of California should be of interest and is given below :

County	Total number M. D.'s	Members	Non- members	% Mem- bership
Alameda	718	406	312	56.5
Amador	7	4	3	56.9
Butte	34	20	14	58.7
Calaveras	11	5	6	45.5
Colusa	5	5	0	100
Contra Costa	62	30	32	48.3
Del Norte	3	1	2	33.3
El Dorado	3	2	1	66.6
Fresno	135	103	32	76.3
Glenn	14	8	6	57
Humboldt	40	33	7	82.5
Imperial	33	22	11	33.3
Kern	67	48	19	71.6
Kings	15	8	7	53.3
Lake	10	2	8	20
Lassen	10	10	0	100
Los Angeles	3535	1684	1851	47.6
Madera	15	8	7	53.3
Marin	33	20	13	60.5
Mariposa	4	1	3	25
Mendocino	22	15	7	68
Merced	24	20	4	83.3
Mono	1	1	0	100
Monterey	49	27	22	55
Napa	41	23	18	56
Nevada	10	6	4	60
Orange	133	88	45	66
Placer	33	29	4	87
Plumas	7	4	3	57
Riverside	77	49	28	63
Sacramento	150	127	23	84
San Benito	13	7	6	53
San Bernardino	154	103	51	66
San Diego	392	223	169	56.7
San Francisco	1490	917	573	61.5
San Joaquin	105	83	22	79
San Luis Obispo	29	11	18	37.7
San Mateo	56	31	25	55.3
Santa Barbara	86	68	18	79
Santa Clara	227	143	84	62.7
Santa Cruz	50	29	21	58
Shasta	10	8	2	80
Sierra	2	1	1	50
Siskiyou	22	15	7	68
Solano	39	18	21	46
Sonoma	69	44	25	63.5
Stanislaus	57	38	19	66.6
Sutter	9	5	4	55.5
Tehama	17	11	6	64.5
Trinity	1	1	0	100
Tulare	64	41	23	64
Tuolumne	13	5	8	38.5
Ventura	40	24	16	60
Yolo	28	23	5	82
Yuba	18	14	4	77.5

There may be some minor discrepancies in the figures above given, but on the whole the table represents the approximate number and percentages of member and nonmember physicians in California counties at this time. These statistics are here presented because they may serve as a starting point and be of service to county society officers who wish to make surveys in their respective counties.

* * *

How Some of the Counties Compare, One With the Other.—It is interesting that in three counties, Mono, Trinity and Colusa, there is a 100 per cent membership, a rather surprising per cent, but not more so to many readers, than the statement that in those three California counties each

county contains only one resident doctor of medicine in the entire county! In such sparsely settled counties—and California has inherited a number of such from the days of forty-nine—it is easy to get a high percentage figure. Lassen County, however, with ten physicians, has a total of ten members in its county society, giving it also a 100 per cent rating.

For the larger counties, the total society membership and the percentage of membership in relation to licensed doctors of medicine runs somewhat as follows: *Los Angeles*, 1684 members—47.6 per cent; *San Francisco*, 917 members—61.5 per cent; *Alameda*, 406 members—56.5 per cent; *San Diego*, 223 members—56.7 per cent; *Santa Clara*, 143 members—62.7 per cent; *Sacramento*, 127 members—84 per cent, and *Fresno*, 103 members—76.3 per cent.

Of county societies having more than 100 members, Sacramento, which has the honor of being the oldest county medical society of California, leads off with an 84 per cent membership. Los Angeles, which has the largest county society in the state, has the lowest rating in the list just given, with 47.6 per cent of the licensed doctors of medicine as members.

Membership statistics are necessarily a not over interesting subject to many members, but they should be of real interest to the officers of component county medical societies, because the responsibility of bringing into the fold of organized medicine all eligible nonmembers, rests somewhat directly upon those colleagues who have been honored by the bestowal of official positions from their fellows. It is hoped that the information here given will be of aid in promoting increased effort to have each component county society measure up to its maximum capacity for service.

MEETINGS OF COUNTY SOCIETIES AND
HOSPITAL STAFFS—SUGGESTION OF
SUMMER OUTING MEETING

The Overplus of Hospital Staff Meetings.—The standardization of hospital movement of recent years has more than justified itself. In its train of real and supposed improvements were contained, however, some procedures and activities which time has proven to have less value for developmental progress in organized medicine than was at first thought. A few years ago, in the initial enthusiasm over staff organization as a part of the program in the standardization of hospitals, plans for general and section staff meetings were laid down in some hospitals, with such generous multiplicity of gatherings and with such detailed minuteness, that in a very short time, many staff members found most of their evenings of each month presumably allocated to such meetings. To many medical men, it seemed as if a sort of evening postgraduate course of intensive type had been instituted, which, because of the compulsory attendance rules they presumably were obligated to take. This set-up was especially true in some of the larger cities, where

busy men who had membership on the staffs of two or more hospitals, at times found themselves almost inundated in their supposed hospital staff responsibilities.

* * *

Effect of Some Hospital Staff Meetings on County Medical Society Meeting Attendance.—As one looks back at recent hospital staff organization it does not now seem strange that, with active program committees, interest in the meetings of component county medical societies under such conditions should have suffered. From the standpoint of the best interests of organized medicine, such lesser interest in the meetings of component county societies was not at all desirable. Fortunately, the inconveniences associated with compulsory attendance at hospital staff meetings have helped bring about a readjustment of viewpoints and rules, so that in many communities the problem is now being satisfactorily remedied.

As a consequence, many hospital staffs now hold meetings less frequently, or if held as often as formerly, the stringent requirement of attendance at practically every meeting is not enforced. For a time, some of the program committees of staff organizations seemed to forget that a hospital staff organization was intended to limit its program presentations at staff meetings to professional topics having to do with patients and experiences in their respective institutions. In such staff organizations the hospital programs to considerable extent lapped over into those fields of activity which had long been and which still are the legitimate domains of county medical societies.

Because county medical societies are the backbone of the whole plan of organized medicine, and because organized medicine is absolutely necessary for effective results in public health and in general professional as well as in hospital work, all activities interfering with the development of county medical units must be thoroughly investigated, so that undesirable duplication may be avoided. Happily, experience has brought about a better understanding in these matters. The members of hospital staffs are learning that too frequent meetings, or too frequent discussion of matters of nonclinical or nonhospital nature are simply time-consuming measures that neither make for better staff work, better standardization of hospitals or better organization of the medical profession. Where overenthusiastic program committees of staffs continue to offend, staff members should not hesitate to call attention to the bad end-results which are apt to accrue from such too frequent staff meetings, or from scientific programs which overlap on legitimate county medical society activities.

* * *

A Summer Outing Meeting Quite Feasible.—During some one of the summer months, when the routine monthly or bi-monthly evening scientific meetings are not held, an opportunity exists for county society and staff organizations to promote organization activities through a good fel-

lowship outing or picnic. Such an outing can be arranged for some week-end, as on a Saturday afternoon or evening, or if the rendezvous is some distance away, an all day Sunday outing may be held. In almost every locality in these western states a near-by wood or canyon, or a club, or the grounds of a private country home are accessible. To such a place the members of a society or staff could go, for an all-day outdoor picnic or get-together afternoon and supper. Service could be by informal basket if club service was not to be had. Attendance might first be tried out with members only present. Then, if desirable, an outing to which family members could be invited, might be tried.

* * *

The Outing Meeting of One Hospital Staff.—At a recent staff meeting which the writer attended, the energetic committee in charge canvassed the staff members, signing them up for different games like quoits, target shooting and so on, collecting a one dollar fee from all entrants, and then giving the total sums collected to the members who won firsts and seconds in each group of games. At that particular outing, staff members in Oakland arose and in groups breakfasted with one another at different homes as early as 6 a. m., because the outing rendezvous was some two hours or more motor trip away, in an adjacent county. This particular hospital staff has held these outings once yearly during the last several years, the hospital coöperating by sending its chef and other help, to make certain that a good out-of-door luncheon would be served. Other entertainment features, such as baseball, cards and so on were provided. At the luncheon several informal speeches were made; and on this particular occasion, the host of the day at whose ranch these outings had been held yearly, was presented with a flagstaff and flag, to adorn the entrance to his ranch homestead. The attendance at this staff meeting was almost one hundred, practically all of these busy physicians giving up the best part of this particular Sunday, to relax and be boys and to become better acquainted with one another.

* * *

Physicians Should Know How to Play as Well as How to Work.—Physicians need just these kinds of contacts from time to time. Their professional lives ordinarily are altogether too isolated and individualistic. That is why so many members of the profession fail to appreciate the human and good qualities of colleagues whom they only occasionally meet, or whom they know only by reputation. Physicians, who are called upon to order the regimen of living of patients, may well take stock of their own recreational needs. The very seriousness of the work which physicians are called upon to do in the practice of medicine only emphasizes the need of occasional relaxation. And it may be said of those who take their profession in overserious fashion that their professional work and achievements are often not much better than those who know how to relax and play at the proper time.

Why Not Have an Outing This Year?—It is hoped county society presidents and hospital staff chairmen will recognize the benefits to be derived from a summer outing meeting. Such an outing can be easily brought into being if the president, secretary and one or two other interested members will act as the outing committee to make the arrangements and take charge of the details. If members who read these lines belong to county societies or hospital staffs in which a summer outing and get-together meeting has never been tried, it is hoped they will feel free to broach the desirability of such an outing to the president or chairman of their organizations. We may not live to eat, but physicians certainly are entitled to some of the joy as well as the labor of living. Meeting one another in informal social fashion makes for better personal and professional understanding and so promotes the interests of organized medicine.

DO YOU SAVE YOUR JOURNALS?

The Scope of California and Western Medicine.—CALIFORNIA AND WESTERN MEDICINE, the official journal of the California Medical Association, and the accredited publication representative of the Utah and Nevada Medical Associations, prints most of the papers which are read at the annual sessions of these three state medical organizations. Through such publication the members of these state societies have an opportunity to contact with the viewpoints of the colleagues who, through their papers at the annual sessions of these organizations, aim to bring to the attention of their fellows the latest knowledge on matters of medical science and practice.

* * *

Current Volumes of CALIFORNIA AND WESTERN MEDICINE Should Be Filed.—Which suggests the thought that members would do well to make room on their library shelves for the issues of at least the current and the preceding year, so that references and resurveys of the contents would be more convenient. The present binding of CALIFORNIA AND WESTERN MEDICINE permits this to be easily done, for each issue has the inclusive pages printed on its back edge, the June and December numbers being also inscribed with the word "Index." The issues of the two volumes of each year take only a small space on book shelves, when placed one on top of the other, with the index volume uppermost. Years ago the writer made this suggestion of printing the page numbers on the back edge of the *Journal of the American Medical Association*, to Editor George H. Simmons, who adopted it for that journal, thus making that splendid publication easier of reference to many readers who did not wish to go to the expense of binding the somewhat bulky fifty-two issues of each year.

It is believed that the readers of CALIFORNIA AND WESTERN MEDICINE will agree that its pages contain many articles which are worthy of reperusal and thought. Keeping the current files for reference is therefore justified. If your office

library is crowded for shelf room, a board can be placed in garage or attic, where the outgoing volumes may bide a bit longer before being consigned to destruction. The official journal of a state medical association, containing as it does a summary of the scientific activities of the colleagues of the commonwealth, and of the efforts that make for the upbuilding of the guild of the healing art and the protection and advancement of the professional interests of its members, is certainly worthy of better treatment than that usually given to current lay literature publications.

If there be those among us who contend to the contrary, it is hoped such colleagues will present papers at future annual sessions which will be of such superior merit that other essayists will be inspired to measure up to the same high standards. Through such participation, essayists, members at large, and our official journal would all be benefited.

HAVE YOU SENT IN YOUR BALLOT ON INCORPORATION?

It Is Important That Ballots Be Sent In.—In July the referendum ballot on incorporation of the California Medical Association was sent to each member of the California Medical Association. In this column in last month's issue, the history of this referendum was outlined. The reasons which led the councilors and officers of the California Medical Association, after several years of discussion, to favor the plan proposed were briefly indicated. A large number of members have sent in their ballots. It is important that as large a vote as possible be secured.

At the recent San Diego annual session the House of Delegates without a single dissenting vote went on record as in favor of the plan of incorporation which was submitted. The Council of the California Medical Association has done likewise.

The plan to incorporate came into being in order to provide ways and means for a greater development of the California Medical Association. The method decided upon was most carefully and deliberately considered. Snap judgment has not been in evidence. No member of the California Medical Association will be under obligations, other than those which exist under the present form of government. The general set-up of the state association will not be altered.

If this incorporation plan is ratified, it will make possible a sounder and broader scope of activities than are apt to come into existence under a nonincorporated system. In other words, the highest and best interests of the California Medical Association and of its members will be conserved and accentuated through such incorporation. It is hoped that members who as yet have not sent in their ballots will do so at an early day. Until a decision is reached by the membership, the Council will naturally wish to postpone definite action on matters of importance to organized medicine. Therefore, if you have not yet sent in your ballot, it is urged that you do so after reading these lines.

MEDICINE TODAY

Current comment on medical progress, discussion of selected topics from recent books or periodic literature, by contributing members. Every member of the California Medical Association is invited to submit discussion suitable for publication in this department. No discussion should be over five hundred words in length.

Bacteriology

Secondary Autointoxication.—To determine the possible etiology of pernicious anemia attention has been directed during recent years to gastro-intestinal intoxication with *B. welchii*. What is apparently a new toxic agent from this microorganism has just been described by Torrey and Kahn, of Cornell University Medical College, New York City.*

These investigators found that *B. welchii* filtrates injected intravenously into rabbits produces a slight transient anemia followed by complete recovery. A fraction of the same dose, however, injected into the marrow of one bone is followed by prompt degenerative changes in all bone marrows of the body, with a resulting chronic, persistent, often fatal anemia.

It is evident that this severe, systemic bone marrow degeneration is not due to a direct action of the bacterial filtrate, otherwise even greater degenerations would follow massive or repeated intravenous injections. We are here apparently dealing with some form of secondary intoxication arising from the locally injured bone marrow. The observation is of particular interest since it clearly shows for the first time the possibility of a much more complex mechanism of bacterial action than that currently assumed by clinicians.

W. H. MANWARING, Stanford University.

Medicine

Tumors of the Pituitary Body.—Our knowledge of the functions and dysfunctions of the group of glandular structures forming the endocrine system has been gained for the most part during the present generation. Considered a few decades ago to be useless vestigial remains, we now know that they form an integral and vital part of the human economy. Of the group, the pituitary body has occupied a very prominent place in the interest of both laboratory and clinical workers. The action of the extract of its posterior lobe is common knowledge which is made use of by the physician in the treatment of conditions met with in daily practice. The relation of pituitary dysfunction to new growths developing within its tissues is not so clearly understood and many of them are overlooked. Cushing states that acromegaly, a fairly common manifestation of pituitary disturbance, is practically always due to an adenoma of the gland.

That tumor formations are among the more common lesions of the pituitary is now recognized by all familiar with its pathology.

Pituitary tumors may give rise to three groups of symptoms, (1) those due to disturbance of the functions of the adjacent structures, (2) those due to an increase or decrease of glandular activity, and finally (3) those due to the influence of pituitary dysfunction on the other glands of the endocrine group. Those of the first group, while not always properly interpreted, usually demand consideration, especially when the visual pathway becomes involved. In the study of the symptoms due to abnormal secretory activity, an understanding of the normal function of the gland is essential. The pituitary is composed of a well-defined anterior and posterior lobe with an interposed pars intermedia. The posterior lobe, formed by an evagination of the encephalon, is probably never the seat of a primary new growth. The anterior lobe, derived from an epithelial expansion of the foregut, is a fairly common situation for adenomatous formations. The pars anterior is composed of two essential types of cells, the *chromophile* or granule-containing and the *chromophobe* or non-granular elements. The chromophile cells contain either *eosinophile* or *basophil* granules, as shown by their reaction to acid or basic dyes. Adenomas are composed of either chromophobe or chromophile cells of the eosinophile type or, in a few instances of a mixture of both. Tumors composed of basophilic cells probably never become large enough to produce symptoms and may be disregarded from a clinical standpoint.

Symptoms of *hyperfunction* of the pituitary, as typically seen in *acromegaly* and *gigantism* are the result of excessive secretion of the constituent cells of the *chromophile adenoma*. Those indicative of *hypofunction* are the result of a pressure atrophy of the normal glandular tissue by a growing tumor whose cells have no active secretory product of their own, such as the *chromophobe adenoma* or the congenital *cranio-pharyngeal pouch cyst*.

The third group of symptoms is due to the influence of the increased or decreased activity of the pituitary upon the other endocrine glands. It will be remembered in this connection that the active principle of the anterior lobe serves normally as a stimulant to the thyroid and as a depressant of the adrenals and gonads. With this relationship in mind one is less apt to misinterpret the various manifestations of pituitary dysfunction incident to new growths arising within its tissues. A possible error of this type is the

* Torrey, J. C., and Kahn, M. C., The Progressive Anemia Following a Single Intramarrow Injection of *B. Welchii* Toxins. *Am. J. Path.*, vol. v, p. 117 (March) 1929.

incorrect evaluation of the obvious symptoms of hyperthyroidism in mild cases of acromegaly whose minor bony and soft tissue changes have been overlooked.

CYRIL B. COURVILLE,
College of Medical Evangelists.

Radiology

Opaque Media in Diagnosis of Maxillary Sinusitis.—Maxillary sinusitis is one of the most common pathological conditions, yet continues to be treated often by the so-called "trial and error method." In not less than half the cases it may sooner or later be associated with infection of ethmoid, sphenoid and frontal sinuses. In the study of maxillary sinusitis by roentgen-ray methods after injection of same by opaque media such as iodized oils, we have an excellent method of determining the type of treatment to be followed. The American-made iodized rape-seed oil (campiodol) is probably more useful than the foreign-made lipiodol and iodipin, which are not so easily diluted. Some of the neglect to study these cases by opaque media is traceable to the roentgenologist who believes he can diagnose all cases of polyps and thickened membranes without the use of such media. I believe it is fair to state that even in the most experienced hands, not over 40 per cent can be so diagnosed. Repeatedly we see cases that have had the benefit of this expert opinion and the only x-ray diagnosis is an even cloudiness of antrum on the x-ray film. This finding is sometimes paralleled by an increase in density on transillumination, but not always. Patient has usually been under treatment from six months to a year by several specialists, there is no discernible discharge from the nose, washings from the antrum are negative, yet patient has a small amount of clear discharge from nose at times, takes cold easily, wheezes, has headaches, dizziness, nausea, etc., and possibly a history of nasal polyps, bronchiectasis or toxemic states. When these antrums are injected with opaque media and then x-rayed the lining membrane is shown to be 4 to 8 mm. in thickness. It is therefore clear that any other treatment than the radical Caldwell-Luc operation will not get results. Often polyps are shown in this way that appeared as an even cloudiness on the x-ray film by the best x-ray technique. This is usually true of multiple polyps in the antrum. Some rhinologists apparently lose interest or make a diagnosis of nonsuppurating hyperplastic membrane, yet when these are operated on, the pathologic findings are certainly good evidence that they can give rise to neuritis, etc., as much as an abscessed tooth can do so. The changes of the thickened membrane in the antrums are usually those of inflammatory edema of the mucosa and submucosa, often infiltrated with lymphocytes. Surface at times shows irregular erosion; these latter cases as a rule have less evidence of edema than the others and are not quite so thick. The amount of vascularity varies, thin-walled vessels occur quite often. It seems reasonable that absorption from this membrane is easily possible, even if the

surface washings are negative for presence of pus. Certain it is that the membrane is not normal and should not be neglected surgically. Also certain is it that x-ray examination after an opaque medium is injected will indicate when radical operation is advisable and will prevent much of the economic loss otherwise apt to come to the unfortunate patient afflicted with chronic hyperplastic maxillary sinusitis.

HENRY SNURE, Los Angeles.

Beware of So-Called "Health Foods," Say U. S. Food Law Officials.—The American public should beware of "health foods," "life grains," and other food products for which makers claim curative or health-giving properties, say officials of the Food, Drug and Insecticide Administration, United States Department of Agriculture.

The administration believes the use of the word "health" in connection with foods constitutes a misbranding under the food and drugs act. "The use of this word implies," says W. G. Campbell, chief of the administration, "that these products have health-giving or curative properties, when, in general, they merely possess some of the nutritive qualities to be expected in any wholesome food product."

"The label claims on these products," he says, "are such that the consumer is led to believe that our ordinary diet is sorely deficient in such vital substances as vitamins and minerals, and that these so-called 'health foods' are absolutely necessary to conserve life and health."

"In the enforcement of the food and drugs act, it is necessary to warn manufacturers of these products to have their labels conform to the facts of medical science and actual laboratory tests. The Food, Drug and Insecticide Administration does not object to calling these products 'wholesome,' provided they are wholesome, but the effort to give the impression that we all need something added to our everyday diet if we are to avoid nutritional disaster is a misrepresentation which the food-law enforcing authorities aim to combat."

"So-called 'health-giving' biscuits, foods, and waters are not only a waste of money if purchased for their curative properties but are responsible for a more serious loss because their use is relied upon as a substitute for appropriate corrective measures, such as a proper diet, exercise and sunshine."—*U. S. Dept. of Agriculture, Press Service.*

Mental Hygiene.—First International Congress on Mental Hygiene will be held at Washington, D. C., May 5-10, 1930. The Congress is sponsored by mental hygiene and related organizations in more than twenty-six countries.

Progress is being made in the organization of the First International Congress on Mental Hygiene, to be held in Washington, D. C., May 5-10, 1930. Educators, psychiatrists, other physicians, public officials, social workers, industrialists and many others from all over the world are expected to be present when the Congress convenes.

Herbert C. Hoover has honored the Congress by accepting the position of honorary president. Already twenty-six countries are represented on the committee on organization, of which Dr. Arthur H. Ruggles, of Providence, R. I., is chairman. Dr. William A. White, of Washington, D. C., is president of the Congress, and Clifford W. Beers is secretary-general.

Questions to be discussed at the Congress will include the relations of mental hygiene to law, to hospitals, to education, industry, social work, delinquency, parenthood and community problems. A world-wide view of mental hygiene progress will be given. Administrative headquarters have been opened at 370 Seventh Avenue, New York City, where John R. Shillady, administrative secretary, is in charge.

STATE MEDICAL ASSOCIATIONS

CALIFORNIA MEDICAL ASSOCIATION

MORTON R. GIBBONS.....President
LYLE C. KINNEY.....President-Elect
EMMA W. POPE.....Secretary

COUNCIL MINUTES

Minutes of the One Hundred and Eightieth Meeting of the Council of the California Medical Association

*Approved at the One Hundred and Eighty-Second
Meeting of the Council*

Held in the offices of the Association, 1016 Balboa Building, San Francisco, Saturday, March 16, 1929, at 10:30 a. m.

Present.—Doctors Kiger, Gibbons, Hamlin, Kelly, Kinney, Duffield, DeLappe, Coffey, Harris, Rogers, Peers, Catton, Kress, Pope and General Counsel Peart.

Absent.—Doctors Pallette, Bingaman, Shephard, Curtiss and Shoemaker.

1. **Roll Call.**—The meeting was called to order by the chairman, Oliver D. Hamlin.

2. **Income Tax Reduction.**—An informal discussion was had on the present campaign being carried on through the Hearst newspapers for decrease of the federal tax on earned incomes.

Action by the Council: On motion of Kress, seconded by Kiger, it was

Resolved, That the Council of the California Medical Association go on record as being in hearty sympathy with the campaign and further that Doctor Kelly draft a resolution on behalf of the Council giving the Council's attitude, and that this resolution be given such publicity as under the premises may add to the force of the resolution.

The secretary was empowered to send a copy of the resolution when drafted to every county unit of the Society and request that they give the matter publicity by passing a somewhat similar resolution and forwarding copy to this office.

3. **Senate Bill 182—Narcotics.**—Senate Bill 182 on Narcotics, sponsored by Senator Sanborn Young, was discussed fully. Doctor Harris stated that he had discussed this bill with Senator Young and that he had been informed that the word "administer" had been deleted from the bill and that the twenty-four-hour notification period had been changed to five days. It was pointed out that the bill dictated the practice of medicine in that it specified a limit on the time of treatment and amount of narcotic allowed an addict under treatment; also that under the provisions of the bill it would be necessary to report a large percentage of all patients treated for other afflictions besides drug addiction.

Action by the Council.—On motion of Kress, seconded by Duffield, it was

Resolved, That the Council of the California Medical Association go on record as violently opposed to Senate Bill 182; first, it is a violation of the personal relationship between the patient and the physician; second, it is impractical, and the provision regarding the punishment of a misdemeanor by fine and jail sentence is little less than an insult to the medical pro-

fession; and further, that a Committee of Three consisting of Doctors Catton, Harris and Duffield be instructed to draft a letter to show the extreme unreasonableness of the bill in regard to percentage of patients that will have to be reported; copy of this letter with copy of Bill 182, if possible, to be sent to every county unit with instructions to defeat this measure as the Council is unalterably opposed to it.

The chairman of the Legislative Committee was named as an ex-officio member of the committee.

It was stated that the increase in cost of medical care might well be stressed in the letter prepared.

4. **Vocational Standards Bill.**—The secretary read a telegram which had been sent to Doctor Shoemaker after the receipt of his telephone call stating that he was preparing to mail a circular letter opposing the Vocational Standards Bill.

Doctor T. Henshaw Kelly, chairman of the Committee on the Vocational Standards Bill, reported step by step on the action taken by the Council and Executive Committee on the Vocational Standards Bill. It was pointed out that both the Council and Executive Committee action indicated that if the bill was amended to include the suggestions of the medical profession, the California Medical Association would not oppose it. Doctor Kelly stated that at the last meeting of the Executive Committee a committee consisting of Doctors Gibbons, Shoemaker, Harris and himself and Mr. Peart as attorney, was appointed to confer with Mr. Heron, and that immediately after the executive meeting he had gotten in touch with Doctor Harris and asked him to arrange a time for the conference. Doctor Kelly stated that on Friday he was advised that Doctor Pope had received a telephone message from Doctor Shoemaker stating that he was sending out a letter opposing the Vocational Standards Bill. Doctor Kelly immediately sent the wire to Doctor Shoemaker asking him to withhold action. At a later conference at Sacramento Doctors Kelly, Gibbons and Harris had discussed the bill and all suggestions of the California Medical Association were incorporated with the exception of two minor suggestions of Mr. Peart which Mr. Heron stated were already covered by other language in the bill. Doctor Shoemaker was unable to attend the Sacramento conference. Discussion was then had of the two points brought out by Mr. Peart; namely, reclassification of Division No. 1 in section 376b, and the provision for retaining all functions and duties which are now or may hereafter be given the Boards in Division No. 1 in section 376n.

After discussion, on motion of Kress, seconded by Harris, it was

Resolved, That the Committee on the Vocational Standards Bill try to incorporate these two suggestions, if possible to do so.

Doctor Duffield then explained the opposition to the bill throughout the South.

It was felt that a fair conception of the bill could only be had after a thorough study and that some of the antagonism might be due to a failure to understand the more intricate points of the bill.

It was the sense of the Council that with one or two minor changes which should be made if possible, the bill was in the shape the Council wanted and that no opposition should therefore be given it.

Discussion was then had regarding the value to the California Medical Association of an official observer at the Assembly who represented other interests in addition to those of the Association.

At this point Doctor Coffey stated that he wished to be relieved of the responsibility of signing vouchers for the Legislative Committee.

Doctor Gibbons commended Doctor Harris on the constructive work done at Sacramento and stated that he felt no other observer was necessary as Doctor Harris was capable of caring for the best interests of the medical profession.

Action by the Council.—On motion of Kress, seconded by Gibbons, it was

Resolved, That a committee consisting of the president of the Association, Doctor Catton, Doctor Harris and Doctor Kelly be empowered to confer with Doctor Shoemaker and discuss the situation.

After further discussion, on motion of Kress, duly made and seconded, it was unanimously

Resolved, That a committee be appointed by the chairman of the Council to draft a letter to be sent to the members of the California Medical Association at the earliest possible moment, telling them the history of the Professional and Vocational Standards Bill and the various actions of the Council, Executive Committee and Legislative Committee leading up to the present amended form of the bill and explaining the reasons why the Council feels that the best solution of the matter now is not to oppose the bill.

The chairman of the Council appointed a Committee of Four consisting of Doctors Harris, Catton, Shoemaker and Kelly.

It was pointed out that the medical profession had always been opposed to lobbyists at Sacramento and that the best interests of public health and medicine could only be served by intelligent discussion and support of the ideals of the medical profession. Also that final authority in all things should always be with the Council or the Executive Committee when the Council is not in session.

Action by the Council.—On motion of Duffield, duly seconded, it was

Resolved, That the Council proceed with the next order of business.

5. Senate Bill 217—Revocation of Licenses.—It was pointed out that this bill provided that conviction or cash compromise of a charge of violation of the Harrison Narcotic Act constitutes sufficient evidence for citation before the Board of Medical Examiners. The bill also contained other provisions for revocation of certificates.

Action by the Council.—On motion of Kress, seconded by Kelly, it was

Resolved, That Senate Bill 217 be referred to a committee consisting of Doctors Catton, Duffield and Harris for study and report to the Committee of Three consisting of Doctors Gibbons, Kelly and Mr. Peart.

Doctors Duffield, Catton and Harris were to meet with Senator Sanborn Young and discuss the narcotic situation.

6. S. B. 258—Cosmetology Bill.—The secretary stated that Dr. Pinkham felt that following the word "appliances," page 2, line 1, the bill should be amended to except high frequency and x-ray machines; and that after the word "practice," line 17, page 2, should be inserted the words "providing that no provision herein shall in any way conflict with any provision of the Medical Practice Act."

7. Nurses Bill.—Senate Bills 52, 104 and 143 were presented. After discussion, on motion duly made and seconded, it was

Resolved, That Doctor Harris inform Senator Crowley that these bills are most inopportune at this time.

8. Jamaica Ginger—S. B. 545.—Senate Bill 545, Jamaica ginger, was referred to the Committee of Three consisting of Doctors Gibbons and Kelly, and Mr. Peart.

9. Medical Service Corporations—A. B. 16.—The secretary presented correspondence from Doctor Shoemaker regarding the Medical Service Corporation and stated that Doctor Shoemaker felt that the passage of A. B. 16 might make these proceedings very complicated.

Action by the Council.—On motion of Coffey, seconded by Duffield, it was

Resolved, That Assembly Bill 16, Bureau of Medical and Hospital Service, be opposed.

10. Mental Health Boards—A. B. 309.—It was the consensus of opinion that this was an undesirable bill.

11. Department of Institutions.—Action by the Council.—On motion of Kress, duly seconded, it was

Resolved, That S. B. 310 be referred to a committee consisting of Doctors Harris, Catton and Duffield for study and report to the Committee of Three consisting of Doctors Gibbons and Kelly, and Mr. Peart, which Committee of Three shall have power to act.

12. S. B. 174—Vagrants.—Senate Bill 174 relating to vagrants was referred to the Committee of Three. It was felt that page 2, line 11, "has lost the power of self-control with reference to his addiction" should be amended to include words to the effect "so as to be a danger to the public morals or health of others."

13. Constitution and By-Laws.—Doctor Kiger inquired as to whether the Constitution and By-Laws had been sent to all county societies, as he had received several inquiries regarding them in the South. The secretary informed Doctor Kiger that they had been mailed to all county societies and presented copies to councilors desiring same.

14. Adjournment.—There being no further business, the meeting adjourned.

OLIVER D. HAMLIN, *Chairman.*

EMMA W. POPE, *Secretary.*

COMPONENT COUNTY SOCIETIES

ALAMEDA COUNTY

The last meeting of the Alameda County Medical Association before its annual vacation was held at the regular meeting room, Ethel Moore Memorial Building, on Monday, June 17, at 8:15 p. m.

The first paper of the scientific program was by Dr. E. D. Moffett on a new disease in society. Dr. Moffett's paper was a discussion of the topic of Birth Control, in which the doctor condemned the entire movement.

The second paper of the evening was a report of a case of vagitus uterinus by Dr. Lindsay Peters. Following an attempt to apply forceps for delivery, air was sucked into the uterus in sufficient quantities to allow the infant to breathe and to cry repeatedly *in utero*. Twenty minutes later the child was delivered in a partially asphyxiated condition, but was resuscitated by artificial respiration. Dr. Kelsey reported having had a similar experience.

The third paper of the evening was a report of a case of carcinoma of the rectum in a fourteen-year-old boy, who had a history of trauma immediately preceding symptoms. This case is the twenty-second case of its kind reported in medical literature in individuals under fifteen years of age.

GERTRUDE MOORE, *Secretary.*

PLACER COUNTY

The Placer County Medical Society met in Auburn Saturday evening, June 15, 1929, with Dr. Max Dunievitz presiding.

There were present the following members and visitors: Members—Drs. Rooney, Thoren, L. B. Barnes, Paul Barnes, Russell, Dunievitz, Durand, Peers, Miller, Fay, Eveleth, Conrad Briner, Monica Stoy Briner and Lewis. Visitors—Dr. Gorley, of Weimar; Dr. Rowe, Oakland; Drs. Gundrum, Harris, Fanning and Haig, Sacramento, and Dr. McGibbon, of Canada.

A letter from Dr. Fred J. Conzelmann, secretary of the San Joaquin Medical Society, reported that Dr. Thomas C. O'Connor, Jr., had been elected to membership by transfer from the Placer County Medical Society to the San Joaquin Medical Society.

The president appointed Dr. Monica Stoy Briner, of Lincoln, and Dr. Mildred E. Thoren, of Weimar, as a committee to cooperate with Mrs. H. S. Rogers, president of the Woman's Auxiliary of the California Medical Society.

The secretary gave a report of the fifty-eighth annual meeting of the California Medical Association at Coronado.

Following the routine business, Dr. Junius B. Harris, Councilor of the Eighth District, addressed the society. This being Dr. Harris' official visit, he reviewed the work of the Council and of the state society during the past year, giving particular attention to a résumé of the work of the legislative committee during the meeting of the recent Legislature.

Dr. Harris also dwelt at some length on the changes in the Constitution and By-Laws, and also on the proposal to establish Councilor District Medical Societies.

At the conclusion of his remarks a vote of thanks and confidence was tendered Dr. Harris for the able manner in which he has represented the Eighth District.

Dr. Albert H. Rowe, of Oakland, a guest of the evening, then gave a most able presentation of the present knowledge of allergy. Dr. Rowe said, in part:

"Allergy is being recognized as a common cause of symptoms in about 25 per cent of the population. Its manifestations occur especially in the skin, the naso-bronchial tract, the gastro-intestinal tract, in the nervous tissue, and, to a lesser extent, in the uro-genital tract. As causes of hay fever, asthma and eczema, foods, pollens, animal emanations, house dusts, occupational dusts, certain drugs, and miscellaneous substances, such as orris root and pyrethrum, must be considered. As a cause of urticaria, angioneurotic edema and migraine, certain types of neuralgia, certain gastro-intestinal disturbances and the so-called bladder allergy, food sensitization is commonly at fault. In fact, food allergy occurs more often in children, and especially in adults, than has been appreciated and is infrequently associated with positive skin reactions. For the diagnosis of such food allergy, the history of food idiosyncrasies, the presence of a personal or family history of an allergic condition and the presence of positive skin reactions are of importance. The use of my elimination diets has been found to be of great value in both the diagnosis and the treatment of the various manifestations of food allergy."

Dr. Gundrum, of Sacramento, opened the discussion in his usual able and interesting manner. The paper was further discussed by Drs. J. B. Harris, William M. Miller, Max Dunievitz and Robert A. Peers.

No further business appearing the meeting adjourned.

ROBERT A. PEERS, *Secretary*.

SACRAMENTO COUNTY

The regular monthly meeting of the Sacramento Society for Medical Improvement was held at the Senator Hotel on June 18 and called to order by President Pope at 8:40 p. m.

The minutes of the previous meeting were read and approved.

Dr. Hall reported a case of rabies in a dog which bit two children. The head of the dog was sent to the University of California laboratory and a report was positive for rabies. The children now are under treatment.

The paper of the evening, "Facts and Fallacies of the Wassermann Test," was given by Dr. Fanning.

Dr. Fanning stated that since the Wassermann test was originated in 1906 many workers and investigators had published numerous modifications and improvements, and that today few or none are performed exactly as was the original. The most important that has stood the test of time is Kolmer's modification.

In 1921 Kolmer studied all tests thoroughly and without bias, and after much effort incorporated the facts into a new test, embracing a new antigen and technical improvements, and so today this test excels all other tests in sensitivity and specificity.

Many serologists and technicians object to the Kolmer method because of the added time needed in the performance and interpretation of the test and the delay from the sixteen to eighteen hours' ice-box fixation, so many use Kolmer's cholesterinized beefheart antigen only, devising their own modifications. The men who do this should not be criticized too severely because in many instances it may be due to incompetent laboratories or technicians. Likewise the physicians rush the laboratories too much and demand a report the same day the blood is sent in. They do not allow the laboratories sufficient time.

Specificity.—The Wassermann test today is not biologically specific, for we use an antigen of cholesterinized beefheart instead of luetic extracts. It has been definitely proven that only the lipoids are necessary for the antigen antibody reaction. The Kolmer test gives only a true positive reaction in syphilis and yaws.

The acute exanthemata and many other conditions give a positive reaction with the older methods, but can now be ruled out as not being luetic.

Certain conditions at times may interfere with the Kolmer test. Some of these are jaundice, postmortem serum badly hemolyzed, and placental cord blood.

The greatest error in all tests is the false negative. The strength of the test depends on the degree of spirochetal activity and the liberation of "reagin." In negative cases oftentimes the tests are not sensitive enough to pick up small amounts of reagin.

In some cases, especially those with involvement of the brain and cord, the Wassermann reaction may be negative and the spinal fluid positive. In old cases, and those presenting evidence of involvement clinically, a negative blood reaction possesses little or no value in excluding lues. This occurs also in treated cases and a spinal fluid examination must be performed before conclusions can be drawn on the serological cure of lues.

A positive Wassermann is not always an indication that a particular lesion is luetic. Patients may have lues and any other disease, for lues grants no immunity to infections or pathological processes, but rather predisposes to other diseases.

The Wassermann test is the most delicate and constant of the single sign of lues, usually the last to disappear and the first to reappear if a complete cure has not been effected. In treated cases a single negative is no evidence of a cure, for after treatment is discarded the Wassermann test may reappear positive,

followed by clinical relapses. It is necessary to make successive examinations for two years at least, and occasionally at set intervals the remainder of the patient's life.

In closing Dr. Fanning stated that no valuable diagnostic test has received so much exultant praise or so much unworthy criticism as the Wassermann reaction, and that the Kolmer modification is an exact affair, worked out to the most minute details, and it should be followed to the letter, or the results will not meet expectations, and unless followed, the variations should not be laid at the door of Kolmer's test.

The paper was ably discussed by Drs. Christman, Harris, Schoff, Gundrum, Beach, Scatena and Wilder.

The applications for membership from Drs. Pollock and Barrette were read and voted upon. Both were elected to membership.

A letter from the nurses was read. This was in regard to a ten instead of a twelve-hour day. A higher fee was asked if a twelve-hour day was necessary. This was discussed, and it was then moved and seconded that this matter be laid on the table. Motion carried.

Report of committees.—Dr. Lindsay being absent there was no report in regard to the delegates of the State Convention.

Dr. Harris reported on matters taken up at the Council. The principal matter taken up was that of a new constitution and by-laws. Dr. Harris also stated that the state was to be divided into nine councilor districts and that there were to be eighteen counties in the northern district.

There being no further business the meeting adjourned.

H. SCHLUTER, *Secretary*.

✽

SAN BERNARDINO COUNTY

Minutes of the regular meeting of the San Bernardino County Medical Society held at the Redlands Community Hospital on May 21, 1929:

The meeting began with inspection of the hospital at 7 p. m.

Meeting was called to order by the president at 8:15.

The minutes of the previous meeting were read, and, after correction, were approved.

Communications from the California Tuberculosis Association and University of California regarding summer courses for graduates were read.

The following were elected to membership: Drs. C. A. McDowell, H. W. Seiger and Alma Goude.

The program consisted of two papers: 1. "Cardio-Renal-Vascular Disease; 2. "Ureteral Anastomosis."

Owing to the length of the program the papers were not thrown open to general discussion.

The meeting closed at 9:30, following which refreshments were served by the Cloverleaf Club of Redlands and a second inspection of the hospital followed.

E. J. EYTINGE, *Secretary*.

✽

SAN DIEGO COUNTY

The San Diego County Medical Society and affiliated scientific bodies hold no meetings throughout July and August, nor do the medical staffs of the various hospitals place any scientific programs during this period.

A good number of our local members attended the American Medical Association in Portland, taking advantage of the comparative nearness of that great meeting.

The June meeting of the society, the last one before the summer recess, featured an excellent entertainment by our local men, Drs. T. O. Burger, C. J.

Osborne and H. G. Holder, in the form of a 35-mm. three-reel moving picture illustrating the modern method of treating varicose veins by the injection of sclerosing solutions. The pictures showed graphically the anatomical structure relating to the venous system of the lower extremities. Animated pictures showed the circulation in normal veins and those varicosed or without proper valve control. Various tests were shown illustrating the incompetency of valves on the saphenous and intercommunicating veins. The technique of the injection treatment was graphically portrayed from a living subject, while the text on the screen discussed the solutions used and the indications for their selections. So large a series of cases were reported and with such signal success as to place this injection treatment in an established position in the surgery of today.

The summer session of the San Diego Teachers' College, now in session under Dean Willis Johnson, includes public health talks every day during the week of July 7 to 12 inclusive. Among the speakers on this program we note the names of Dr. Kofoid of California University; Dr. Lokrantz, of Los Angeles; Dr. Aurelia Reinhardt, president of Mills College, Oakland, and Dr. William H. Barrow, of San Diego. This course of health talks open to the public was endorsed by the Council of the San Diego County Medical Society.

ROBERT POLLOCK.

CHANGES IN MEMBERSHIP

New Members

Humboldt County—Harold Galen Leland.
Imperial County—W. E. Hart.
Mendocino County—Charles E. Sisson.
Napa County—Clarence E. Nelson.
Orange County—Paul H. Esslinger, M. K. Tadmstrom, J. A. Wood.
Sacramento County—John H. Miyasaki.
San Francisco County—Abraham Bernstein, Enea A. Guis, Kozo Tamaki, Mast Wolfson.
Ventura County—Douglas W. Ritchie, Rudolph Patton.

Transferred Members

Thomas C. O'Connor, Jr., from Placer to San Joaquin County.
Carl G. Williams, from San Bernardino to Los Angeles County.
Ethel H. Williams, from San Bernardino to Los Angeles County.

Resignations

Harry B. Reynolds, Santa Clara County.
Elsie Reed Mitchell, Alameda County.
Oscar Mohs, Alameda County.
Fred W. Morse, Alameda County.

Deaths

Ainsworth, Frank Kenley. Died at San Francisco, July 5, 1929, age 79. Graduate of the University of Vermont College of Medicine, Burlington, 1878, and New York University Medical College, 1879. Licensed in California, 1886. Doctor Ainsworth was a member of the San Francisco County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Bonthius, Andrew. Died at Pasadena, April 6, 1929, age 55. Graduate of the Northwestern University Medical School, Chicago, 1909. Licensed in California, 1914. Doctor Bonthius was a member of the Los Angeles County Medical Association, the California Medical Association and a Fellow of the American Medical Association.

Leisenring, Luther M. Died at Mare Island, July 9, 1929, age 54. Graduate of the University of Nebraska College of Medicine, Omaha, 1901. Licensed in California, 1901. Doctor Leisenring was a member of the Solano County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

NEVADA STATE MEDICAL ASSOCIATION

R. R. CRAIG.....	President
W. A. SHAW.....	President-Elect
H. A. PARADIS.....	First Vice-President
R. P. ROANTREE.....	Second Vice-President
HORACE J. BROWN.....	Secretary-Treasurer
R. P. ROANTREE, D. A. TURNER, S. K. MORRISON.....	Trustees

OFFICIAL NOTICE

The Annual Meeting.—The time is rapidly approaching for our next annual meeting which will be held at Elko, September 27th and 28th. This will probably be only an announcement to some people, but to those that know the way Elko entertains, it will mean another of those times that no sane physician would want to miss. The local committee doesn't want to be handicapped by too much scientific program, so the number of essays will be limited to eight. Those eight will be chosen with great care and we expect to surprise you when you see the program.

We wish, also, to call your attention to another important medical event. On August 23rd, 24th and 25th Nevada is going to entertain the Pacific Association of Railway Surgeons at Reno. The Washoe County Society has pledged its support and will help to entertain our visitors, who will come from nine western states, and we solicit the cooperation of the members of the N. S. M. A. to help make their meeting a success. About two hundred visitors are expected, and it will be the largest medical convention ever held within our borders. It is hoped that all who can will attend this meeting, especially all who are railroad surgeons. All of the latter are eligible to membership and any that desire to join can obtain an application blank by writing to your secretary. Let's help the Pacific Association of Railway Surgeons to make this the banner meeting of their history.

UTAH STATE MEDICAL ASSOCIATION

H. P. KIRTLEY, Salt Lake City.....	President
WILLIAM L. RICH, Salt Lake City.....	President-Elect
M. M. CRITCHLOW, Salt Lake City.....	Secretary
J. U. GIESY, 701 Medical Arts Building, Salt Lake City.....	Associate Editor for Utah

OFFICIAL NOTICE

Attention is called to the new personnel of the Publication Committee. Under this arrangement all secretaries of the component county societies are automatically members of the Publication Committee, and one of their functions is to furnish to the editor each month during their term of office, such news as may occur in their society or its personnel, as well as a monthly report of their society meeting, not later than the tenth of each month. These reports will be coordinated and forwarded to the San Francisco office of CALIFORNIA AND WESTERN MEDICINE. It is hoped that in this way a fuller report of medical activities from all sections of the state may be obtained.

* * *

Place of 1930 meeting, Salt Lake City.
Time of 1930 meeting, to be announced.

* * *

Officers for the Year 1929-1930

President.....	H. P. Kirtley, Salt Lake City
President-Elect.....	Wm. L. Rich, Salt Lake City
First Vice-President.....	W. H. Budge, Ogden
Second Vice-President.....	David Gottfredson, Richfield
Third Vice-President.....	J. W. Hayward, Logan
Secretary.....	M. M. Critchlow, Salt Lake City Term expires 1931
Treasurer.....	E. D. LeCompte, Salt Lake City

Councilors.....	F. A. Goeltz, chairman, Salt Lake City Second District, term expires 1930
	C. E. McDermid, Castlegate Third District, term expires 1931
	E. R. Dumke, Ogden First District, term expires 1932
Delegate to A. M. A.....	Sol. G. Kahn, Salt Lake City Term expires 1930
Alternate Delegate to A. M. A.....	E. M. Neher, Salt Lake City Term expires 1930

Associate Editor.....J. U. Giesy, Salt Lake City
The following committee appointments for the fiscal year (1929-30) have been made by President Kirtley:

Scientific Work

G. G. Richards, chairman.....	One year
M. M. Critchlow.....	Two years
M. C. Lindem.....	Three years

Public Policy

J. C. Landenberger, chairman.....	One year
J. R. Morrell.....	One year
M. M. Nielson.....	One year
A. C. Callister.....	Two years
J. Z. Brown.....	Two years
H. E. Dice.....	Two years
D. C. Budge.....	Three years
T. J. Welsh.....	Three years
C. M. Benedict.....	Three years

Publication

J. U. Giesy, chairman.....	Two years
W. R. Tyndale.....	One year
Odeen Luke.....	One year
J. W. Hayward.....	One year
W. T. Elliott.....	One year
H. Asa Dewey.....	One year
B. E. Bonar.....	One year
H. E. Rich.....	One year
J. L. Aird.....	One year
G. M. Fister.....	One year

Public Health

R. S. Allison, chairman.....	One year
Ezra Rich.....	Two years
R. T. Richards.....	Three years

Medical Defense

E. F. Root, chairman.....	One year
W. G. Schulte.....	One year
E. R. Dumke.....	One year
J. P. Kerby.....	Two years
R. C. Pendleton.....	Two years
W. E. Whalen.....	Two years
R. A. Pearse.....	Three years
A. L. Huether.....	Three years
J. J. Galligan.....	Three years

Medical Education and Hospitals

L. J. Paul, chairman.....	One year
W. F. Beer.....	One year
R. A. Pearse.....	One year
Clarence Snow.....	Two years
E. D. LeCompte.....	Two years
E. F. Gianotti.....	Two years
B. I. Burns.....	Three years
A. J. Murphy.....	Three years
J. W. Bergstrom.....	Three years

Medical Economics

F. S. Bascom, chairman.....	One year
T. B. Beatty.....	Two years
Ezra Rich.....	Three years

Necrology

J. U. Giesy, chairman

Postgraduate Work

L. E. Viko, chairman

Sol. G. Kahn

W. R. Tyndale

Reference

J. Z. Brown, chairman

F. L. Peterson

Leroy Pugmire

Credentials

M. M. Critchlow, chairman

W. B. Preston

Arnold Robison

MISCELLANY

Items for the News column must be furnished by the twentieth of the preceding month. Under this department are grouped: Comment on Current and Recent Articles in the Journal; News; Medical Economics; Correspondence; Department of Public Health; California Board of Medical Examiners; and Twenty-Five Years Ago. For Book Reviews, see index on the front cover, under Miscellany.

NEWS

Physician-Superintendent of Stanford Medical School.—Dr. Ralph B. Seem, of the Billings Memorial Hospital of the University of Chicago, has been appointed Physician-Superintendent of Hospitals and Professor of Hospital Administration at the Medical School of Stanford University in place of Dr. R. G. Brodrick, deceased, appointment to take effect on September 1, 1929.

The Eighth Annual Meeting of the American College of Physical Therapy, November 4, 5, 6 and 7, 1929, Hotel Sherman, Chicago.—Chicago has again been selected as the annual meeting place for the clinical congress of physical therapy of the American College of Physical Therapy. One-half of each day will be devoted to a variety of clinics in the sections on medicine, surgery and allied specialties, and eye, ear, nose and throat. Scientific papers, clinical addresses, demonstrations of technique, and scientific and technical exhibits will comprise the remainder of a scientific program. Attendance at the congress is not limited to the fellows of the college. All duly licensed physicians, their technicians and assistants, properly sponsored, are cordially invited to attend all the sessions.

Program and other information may be obtained by writing to the executive offices, American College of Physical Therapy, 716-30 N. Michigan Avenue, Chicago, Illinois.

The American Association for the Study of Goiter will award a prize of \$300 and a medal of honor to the author of the best essay based upon original research work on any phase of goiter, presented at their annual meeting at Seattle, Washington, in September, 1930.

Competing manuscripts must be in the hands of the corresponding secretary by July 4, 1930, so that the award committee will have sufficient time to thoroughly examine all data before making the award.

Full particulars of other regulations governing details of the offer will be furnished on application.

Shockproof X-Ray Apparatus Now Available.—Simplification in design and improved controls have enabled the roentgenologist constantly to improve the quality of his work and obtain uniformly satisfactory results through the standardized technique which these improvements have made possible.

Shortly after the CDX was placed on the market the Victor engineering and designing organization, under the leadership of J. B. Wantz, started work on the development of a shockproof type of X-ray unit for the use of the roentgenologists in the medical x-ray field.

The development of the shockproof x-ray unit is considered as probably the most important contribution to x-ray science since the advent of the Coolidge tube. The knowledge and experience gained during these many years are reflected in the design of this new apparatus. Nothing has been left undone to bring to a realization the fine piece of workmanship, in justice to the important rôle to which it is believed this apparatus will be assigned in future radiology.

It is dedicated to that body of specialists, the roentgenologists, who have so immeasurably contributed to the advancement of medical science.

Eleventh Convention for the Revision of the Pharmacopœia of the United States of America.—In compliance with the provisions of the Constitution and By-Laws of the United States Pharmacopœial Convention, the president of the convention hereby invites the several bodies, entitled under the Constitution to representation therein, to appoint delegates to the Eleventh Decennial Convention to meet in Washington, D. C., on May 13, 1930. The members of the United States Pharmacopœial Convention, in addition to the incorporators and their associates, shall be delegates elected by the following organizations in the manner they shall respectively provide: Incorporated medical colleges, and medical schools connected with incorporated colleges and universities; incorporated colleges of pharmacy, and pharmaceutical schools connected with incorporated universities; incorporated state medical associations; incorporated state pharmaceutical associations; the American Medical Association, the American Pharmaceutical Association, the American Chemical Society, the National Association of Retail Druggists, and the National Association of Boards of Pharmacy; *provided that no such organization shall be entitled to representation unless it shall have been incorporated within and shall have been in continuous operation in the United States for at least five years before the time fixed for the decennial meeting of this corporation.*

U. C. to Offer Filipinos Aid in Health Work.—As an additional means of service to the people of the state, the University of California Institute of Tropical Medicine, recently organized as a part of Hooper Foundation for Medical Research, is opening a special clinic for Filipinos.

This new clinic will be in charge of Dr. H. G. Marquez, himself a native of the Philippine Islands, according to the announcement made today by Dr. Alfred C. Reed, professor of tropical medicine.

Dr. Reed explains that there are thousands of Filipinos in California, many of them not able to speak English well, and consequently rather backward about visiting the regular clinics. With one of their own countrymen in charge, however, the new clinic will avoid this difficulty.

In San Francisco alone the Filipino population is estimated to be about 2100. A staff of two doctors and a graduate student in the Medical School, will take care of the patients. These doctors are Dr. Paul G. Capps, and Dr. Garry R. Burke.—*U. C. Clip Sheet.*

Infirmery at U. C. at Berkeley.—With excavations already completed, construction on the new infirmery which is to be built on the east side of College Avenue, directly across from the old structure, will soon be under way. The equipment will be entirely modern and an adequate dispensary will be provided. The new infirmery will also contain enough wards for around 100 confined persons. Completion is being rushed for the fall of next year. The entire cost will be \$450,000.—*U. C. Clip Sheet.*

TWENTY-FIVE YEARS AGO*

EXCERPTS FROM OUR STATE MEDICAL JOURNAL

Volume II, No. 8, August 1904

From some editorial notes:

... *The American Medical Association Trustees.*—While presidents come and presidents go, the trustees stay on forever, or nearly so. It is the trustees who are really the American Medical Association, for everything that is done at a meeting must be again enacted by the trustees, in Illinois, in order for it to be a legally accomplished fact. . . .

... Gentlemen, the conduct of "the greatest advertising medium for proprietary medicines in this country"—the *Journal of the American Medical Association*—is in your hands. What are you going to do with it? Are you going to continue the policy of "Dollars; dirty or clean; Dollars"? . . .

... *Eliminate the Quacks.*—County societies should at once undertake the work of getting rid of the illegal practitioners within their territory. . . .

... The public should not be, for a day longer than is absolutely necessary, preyed upon by the quack and the faker. It is money in the pocket of the physician to allow this sort of thing to go on, for the quacks do more harm than good, and eventually the sufferer must go to the physician for relief. But the medical profession is built upon the rock of self-sacrifice; its every effort for generation after generation has been to prevent sickness; to do away with the necessity of calling upon the doctor for treatment by preventing the advent of that for which treatment would eventually be required. . . .

... *State Journals.*—At least two more state societies are on the road to that proper state of existence wherein they will own and publish their own journals. New Jersey and Ohio have the matter under consideration, and probably will eventually undertake the work. . . .

... *Value of Big Game.*—... The court records now show that discrimination is eliminated from the case when the medical practice law is in question; that the reputation or professional standing of a man is of no weight in the trial of the one fact—*Has this man a license to practice medicine or has he not?* . . .

From an article on "Tendon Transplantation" by S. J. Hunkin, M. D., San Francisco:

Some one and a half years ago I had the honor to read a paper before this society, dealing with the subject of tendon transplantation, in which I made sundry remarks that I expected would provoke criticism, but which fell unnoticed or unheeded. Added experience impels me now to reiterate some of those statements, which I deem worthy of your attention. At that time I also maintained a position on the technique of tendon work which I find is not tenable, and which I now desire to retract. I shall be content, however, to note especially a single instance of each character, although several such will be found upon comparison. . . .

From an article on "Intestinal Obstruction" by Charles D. Lockwood, M. D., Los Angeles:

The fate of a patient suffering from acute intestinal obstruction is largely determined in the first forty-eight hours, and it rests with the physician who first sees the case. Early diagnosis and prompt surgical intervention offer the only hope of a successful issue in the majority of cases. . . .

* This column aims to mirror the work and aims of colleagues who bore the brunt of state society work some twenty-five years ago. It is hoped that such presentation will be of interest to both old and recent members.

From an article on "Extracts from Recent Literature on Fourth of July Tetanus" by Frances Louise Newton, M. D., Woodland:

I have, from my earliest recollections, been interested in tetanus. The children that I knew warned each other against stepping on a rusty nail for fear of lockjaw, just as they taught each other the kinds of mushrooms that were poisonous and those that were edible. My interest has been much increased within the past year by the numerous articles that have appeared in the medical journals upon the subject, especially *The Journal of the American Medical Association*, whose attention was attracted by the appalling loss of life through the celebration of the Fourth of July recorded in the daily papers throughout the country. . . .

From an article on "Innervation of the Heart" by O. O. Witherbee, M. D., Los Angeles:

The need of more satisfactory measures for the care of patients suffering from shock has long been felt by physicians, and an attempt to meet the demands has in many cases been made with, perhaps, as little consideration of the true physiological derangement as is usual in the treatment of the most obscure maladies. . . .

From an article on "Determination of the Functional Capacity of the Kidneys, with Special Reference to Kidney Surgery" by M. Krotoszyner, M. D., San Francisco:

Since Gustav Simon of Heidelberg, on the 2d of August 1869, performed the first successful nephrectomy, and since he proved that this organ, considered indispensable to man heretofore, could be removed with subsequent benefit to the patient, surgery of the kidneys and ureters has made unprecedented advances, and may, in its technique, be considered complete and perfect. . . .

From reports of county medical societies:

Alameda County.—... The second paper was read by Doctor Shuey, on "Diet in Health and Disease."

"The way the majority of people eat is to take anything that pleases the palate. This popular standard is faulty. On the other hand, we have the food crank, such as the vegetarian. Both of these, the epicure and the food crank, seem to thrive and maintain a fair degree of health. As examples of this can be quoted the case of a vegetarian who averaged five pounds a day, and an epicure who averaged twenty-seven pounds daily, both of them keeping in fairly good health. . . .

... Discussion.—Doctor Stratton—I think that not enough stress is laid upon broths and soups, as they are nourishing and pleasant to take.

Dr. Von Adelung—The medical world has passed through all stages of peptonizing, sterilizing, etc., and those who have given the most attention to the subject have gone back to simple milk. It is a lamentable fact that most people eat too much.

Doctor Buteau—In the question of food, each person is a law unto himself. People, like engines, vary in the amount of energy they produce from the same amount of fuel taken. If food is not oxidized there is a loss of energy. Time is an important factor. All food, even liquid, should be taken slowly.

Doctor Milton spoke of the proprietary foods being largely alcoholic, and thought that they were prescribed too freely. . . .

San Francisco County.—... Doctor Philip Mills Jones, also a delegate from California to the American Medical Association, reported on the matter of inviting the association to meet in San Francisco next year. He said that the association was very favorably impressed with the idea, but as two meetings had already been held in San Francisco, it was voted to meet in Portland, Oregon, next year. . . .

DEPARTMENT OF PUBLIC HEALTH

By W. M. DICKIE, M. D., *Director*

Fourth of July Wounds Often Productive of Tetanus.—Many years ago large numbers of children in the United States died of tetanus following Fourth of July wounds caused by toy pistols and blank cartridges. In 1903 there were at least three hundred and twenty-five such deaths in children of the United States, most of these cases and deaths following injuries received through the use of blank cartridges. The source of the tetanus spore in such cases has not been fully established, but it is believed that the spore is on the skin of the victim and is injected into the wound made by the blank cartridge. The character of such a wound makes it particularly dangerous in the development of tetanus. The American Medical Association many years ago started a campaign for the observation of a safer and saner Fourth of July. Through the agitation and the publicity of statistics practically every city in the United States enacted some kind of an ordinance regulating the sale of fireworks and explosives. These restrictive measures have been productive of most excellent results in the reduction of deaths and injuries due to these causes.

There is an indication, however, that there is a growing tendency for some cities to rescind the protective measures that have been in force for so many years. The American Museum of Safety, in a survey of six hundred cities in forty-three states, in 1927, found that 195 deaths and 3,179 injuries occurred from the Fourth of July celebration of that year. Among the killed were thirty-one children under six years of age and 122 between the ages of six and twenty; forty-eight of the victims were burned, their clothing having been ignited by fireworks which were supposed to be of the harmless type. Toy pistols and blank cartridges caused forty-six deaths, firecrackers twenty-two deaths, and the eating of fireworks by small children caused sixteen deaths.

Health officers are somewhat concerned over the tendency to nullify local legislation pertaining to the sale of fireworks, particularly toy pistols and blank cartridges. Health officers take this stand because of the great dangers associated with the development of tetanus and lockjaw through the use of these disastrous toys. In the interest of the public health, it is important that the lives of California children be protected against tetanus which may be caused by wounds from toy pistols, caps and blank cartridges.

Now is Season to be on Guard Against Mussel Poisoning.—In July, 1927, following the appearance of 102 cases of food poisoning after eating mussels gathered along the California coast, the State Department of Public Health, in coöperation with the Hooper Foundation for Medical Research, began a series of investigations into this type of poisoning which have been carried on almost continuously since that time. While the exact cause of the poisonous condition in these shellfish has not been determined definitely, it is certain that mussels gathered in the midsummer months may be highly poisonous and the general public should be warned against the apparent danger in eating mussels at this season of the year. Recent examination of these shellfish indicates that a more toxic condition is present in mussels at the present time. Most cases of this poisoning have occurred during the month of July and as a matter of safety mussels gathered during the month, particularly, should be regarded with suspicion.

The investigations have revealed the following facts:

(1) The poison is not formed by bacteria nor is it due to any parasite, so far as is known.

(2) It is not due to asphyxiation or postmortem changes resultant from exposure to sun or changes in the tides.

(3) It is probably the result of a metabolism disease influenced by the food and spawning condition of the shellfish.

(4) Poisonous mussels can not be distinguished from sound mollusks either by appearance, behavior or cooking.

(5) Mussels may become poisonous within a few days and may remain so for several weeks.

(6) During the winter months, December to March, the poison disappears only to reappear late in March.

Health officers are advised to report by telephone or telegraph any cases of mussel poisoning that may occur within the territory under their jurisdiction, making certain to obtain samples of the shellfish which should be forwarded at once to Dr. K. F. Meyer, Director, Hooper Foundation for Medical Research, San Francisco.

Notable declines are seen in the prevalence of chickenpox, mumps, scarlet fever and whooping-cough.

The absence of epidemic poliomyelitis this summer is conspicuous.

Another case of tularemia has appeared.

The typhoid season is here.

CALIFORNIA BOARD OF MEDICAL EXAMINERS

By C. B. PINKHAM, M. D.
Secretary of the Board

In addition to the bills amending the Medical Practice Act, the following bills of interest to the medical profession were acted on:

Senate Bill 10 (Murphy) relative to aged pensioners—died in committee.

Senate Bill 29 (Crowley) establishing a professorship of nursing at University of California—died in committee.

Senate Bill 30 (Crowley) adding a new section to the Pharmacy Act relating to the registration of drug stores—passed (Chapter 156).

Senate Bill 36 (Inman) relating to county health officers, employment of public health nurses and dental hygienists by local boards of supervisors—passed (Chapter 199).

Senate Bill 37 (Inman) permits boards of trustees, etc., to employ public health nurses and dental hygienists—passed (Chapter 200).

Senate Bill 52 (Crowley) relating to certifications of persons other than registered nurses engaged in that occupation—died in committee.

Senate Bill 102 (Lyon) amending the present act preventing manufacture, etc., of adulterated or misbranded foods or liquor—passed (Chapter 202).

Senate Bill 103 (Rochester) creating a commission to select a state hospital site—died on file.

Senate Bill 104 (Crowley) an act to regulate nursing and placing supervision in the newly-created Department of Professional and Vocational Standards—died on file.

Senate Bill 105 (Crowley) amending the Pharmacy Act requiring prescriptions to be filled by duly regis-

tered pharmacists and kept on file for at least two years—passed (Chapter 131).

Senate Bill 107 (Crowley) amending the State Poison Law relative to economic poisons—passed (Chapter 132).

Senate Bill 109 (Lyon) permitting Board of Health to make sanitary examinations of places where food is stored—passed (Chapter 90).

Senate Bill 110 (Lyon) establishing standards for the grading and labeling of eggs—passed (Chapter 91).

Senate Bill 111 (Lyon) amending the act preventing manufacture and sale of adulterated or mislabeled drugs—passed (Chapter 92).

Senate Bill 132 (Baker) requiring the report to the police department of wounded or injured persons taken to a hospital or pharmacy—passed (Chapter 417).

Senate Bill 143 (Crowley) providing for the certification of non-registered nurses—died on file.

Senate Bill 182 (Young) regulating the sale, possession and distribution of habit-forming narcotics—passed (Chapter 216).

Senate Bill 199 (Sharkey) amending the Barber Examiners' Act—passed (Chapter 302).

Senate Bill 201 (Sharkey) referring to the hospital expense of persons charged with crime—passed (Vetoed).

Senate Bill 202 (Sharkey) relating to state hospital expense of a person charged with crime that shall be charged to a relative or estate—passed (Chapter 168).

Senate Bill 231 (Crowley) repealing prior act creating Board of Embalmers, relates to transportation and traffic of dead bodies, and does not interfere with the work of medical colleges—passed (Chapter 140).

Senate Bill 233 (Murphy) relating to sanitation of apartments, etc.—passed (Chapter 141).

Senate Bill 234 (Murphy) relating to sanitation of garages—passed (Chapter 133).

Senate Bill 258 (Crowley) amending Cosmetology Act—died on file.

Senate Bill 261 relating to examination of pure milk and its handlers—died on file.

Senate Bill 283 (Maloney) amending the Workmen's Compensation Act permitting acceptance of reports by examining physicians or licensed chiropractors—died on file.

Senate Bill 310 (Christian) relating to the transfer of persons from any department to any institution by the federal government—died on file.

Senate Bill 337 (Crowley) amending the State Narcotic Act and providing a court may commit drug addicts afflicted with tuberculosis or any other communicable disease to any state hospital—passed (Chapter 236).

Senate Bill 391 (Canepa) relating to state aid for orphans, etc.—died on file.

Senate Bill 395 (Fellom) making it a misdemeanor for hospitals to refuse aid or treatment to persons injured on the public highways—died on file.

Senate Bill 405 (Slater) amending the act describing methods of treatment of mentally sick in public institutions—passed (Chapter 761).

Senate Bill 410 (Crowley) creating the office of Chief of Narcotic Law Enforcement and divorcing from the Board of Pharmacy—passed (Chapter 188).

Senate Bills 436 and 437 (Pedrotti) relating to the care and commitment and maintenance of insane—both died on file.

Senate Bill 478 (Handy) permitting the State Department of Agriculture to make rules relating to rabies which boards of health must carry out—died on file.

Senate Bill 481 (Boggs) Bovine Tuberculosis Law—passed (Chapter 829).

Senate Bill 487 (Jones) relative to establishment of convalescent tuberculosis colonies with a stipulated sum for care of the individuals—passed (Chapter 432).

Senate Bill 497 (Carter) amending Pharmacy Act relative to compounding of prescriptions for medical practitioners—died on file.

Senate Bill 517 (Rochester) requiring that physicians and surgeons obtain necessary blanks from district

attorney for prescription of intoxicating beverages—died on file.

Senate Bill 550 (Inman) amending the Dental Act relative to meetings, examination fees, inspectors, etc.—passed (Chapter 877).

Senate Bill 618 (Rochester) regulating the selling of barbital, diethobarbituric acid or veronal—to be sold on prescription only and not to be refilled—passed (Chapter 449).

Senate Bill 684 (Crowley) providing for a professorship of nursing at University of California—passed (Chapter 689).

Senate Bill 815 (Jones) appropriation for Bureau of Child Hygiene—passed (Chapter 452).

Assembly Bill 16 (West) giving the Insurance Commissioner supervision over medical and hospital service corporations—died in committee.

Assembly Bill 113 (Miller) transportation of dependent children to homes outside the state, the county to pay one-half the total expense—passed (Chapter 528).

Assembly Bill 117 (Crowley) creating State Blind Benefit Commission; provides the board of supervisors may levy taxation for same along the same lines as the crippled children's bill—passed (Chapter 529).

Assembly Bill 124 (Miller) creating an institution for confinement and reformation of women misdemeanants—passed (Chapter 248).

Assembly Bill 156 (Williamson) amending Women's Compensation Act by providing that the average annual earning is the basis for computing disability—passed (Chapter 255).

Assembly Bill 166 (Wright) creating Division of State Aid for Aged and adding additional duties to the boards of supervisors to provide taxes, etc.—passed (Chapter 530).

Assembly Bill 167 (Sewell) providing for the confinement and rehabilitation of defective delinquents—died on file.

Assembly Bill 171 (Woolwine) unclaimed bodies of soldiers, sailors or marines not to be used for scientific purposes—passed (Chapter 345).

Assembly Bill 177 (Coombs) regulating the rehabilitation of physically defective persons—died on file.

Assembly Bill 249 (Bishop and Keaton) continuing revolving fund for rehabilitation of physically defective persons under eighteen—passed (Chapter 752).

Assembly Bill 309 (Coombs) providing for the creation of boards of mental health, appointees to be graduates of accredited medical colleges with physician and surgeon licenses and in practice three years—died on file.

Assembly Bill 394 (Mixer) regulating the sale and disposition of economic poisons—passed (Chapter 517).

Assembly Bill 490 (Byrne) regulating the care and treatment of mental defectives—died on file.

Assembly Bill 523 (Byrne) providing for a commission in connection with state hospitals for insane, and establishing a state hospital for the insane in Southern California—passed (Chapter 683).

Assembly Bills 561 and 562 (Jost) relative to the practice of pharmacy—died on file.

Assembly Bill 689 (Baum) providing for expense of persons committed to state hospitals under Narcotic Rehabilitation Act—passed (Chapter 406).

Assembly Bill 690 (Cloudman) relative to producing and selling imitation milk not applicable to manufacturers of distinctive food compounds—passed (Chapter 458).

Assembly Bill 692 (Baum) relating to expense of persons committed to state hospitals under the Pacific Colony Act—passed (Chapter 407).

Assembly Bill 719 (Scofield) providing that physicians, nurses and hospitals shall have a lien for services with a method of enforcement—died on file.

Assembly Bill 983 (Bliss) relating to commitment of persons to state hospitals, care and compensation—passed (Chapter 757).

Assembly Bill 1033 (Flynn) provides a licensed physician for city and county jails having more than fifty inmates—passed (Chapter 410).

CALIFORNIA AND WESTERN MEDICINE

VOLUME XXXI

SEPTEMBER, 1929

No. 3

REMINISCENCES OF OSLER IN THE EARLY BALTIMORE DAYS*

By W. S. THAYER, M. D.

Baltimore, Maryland

TO have been a disciple and assistant of William Osler for fifteen years, to have shared his friendship until the time of his death, more than fourteen years later, has been one of the privileges of my life.

How well I remember the moment when first I saw him, the figure which in later years became so familiar. 'Twas in Berlin, nearly thirty-nine years ago, at the ninth International Medical Congress. We were standing near the entrance to one of the halls in which the Congress was in session. Among the throng of members passing to and fro, my eyes were attracted by a figure which stood out from the rest. Why?

I have often asked myself. It is not easy to answer. Why, in our early memories, do certain vignettes of face, figure or scene, remain clear and sharp against the haze of the vanishing background?

It may have been the name that was already his. It may have been that my association with him began so soon afterward. Be that as it may, it is the one figure that remains in my memory. My companion I have quite forgotten. Indistinctly I see the building. It was, I think, a temporary, wooden erection. Vaguely I see men wandering about or chatting in small groups waiting for the hour of reassembly; it must have been at the end of the midday recess. But as clearly as if it were before my eyes, one figure stands out—the figure of a man who was not wandering about, who was not idly conversing. Alone, seemingly oblivious of those about him, with an easy, elastic, swinging stride, rapidly but without haste, his open frock coat flowing in the breeze, a package of papers in his left hand, he passed by and entered the hall. He was not a large man. Rather spare but well built, he gave one the impression of vigour and energy. He wore a silk hat and carried a stick. He was obviously well dressed. Among the idle groups, talking together, observing and commenting on their neighbours, he passed, a figure apart, plunged in his own thoughts. The oval, dark, almost olive face, with the long, drooping, black moustache, was calm

and composed, and the deep, thoughtful, dark eyes betrayed the serene, intent and active mind.

"Do you know who that is?" said my companion, who had followed my gaze, "That is Osler, professor of medicine at Johns Hopkins."

How much of Osler there was in that first glimpse! Of how little was I conscious at the moment! How little did I fancy that in three months I should be sitting at his table, and that to him I should owe so large a part of the blessings of my life!

In less than three months the occasion came. One evening, after dinner, I was sitting alone in the little room which, for three weeks in Boston, had served me at once as study, consulting room, and bedroom. The door bell rang and my friend C. entered. He had come to say "Good-bye." He had just finished his internship at the Massachusetts General Hospital, and was on his way to Europe to spend a few years in special study. At the doorway on leaving, as an afterthought, he asked me if I knew a young man who had had an internship, who might care to take a position in Osler's new clinic. It was not an important position, but it offered opportunities for study, and a residency, with the privilege of being one of Osler's staff.

In a few days my old comrade Finney, who had already been in Baltimore a little over a year, and I were supping with Osler and his niece. How well I remember him as he was in those days, the same figure that I had seen in Berlin—the "Chief" as we all called him—lithe, vigorous, handsome. The eyes I remember most clearly; deep, dark, rich, brown eyes; at rest grave, even sad; sometimes, when he looked up suddenly from his work in a moment of deep thought, almost severe. The genius of Sargent caught such a moment in his well-known crayon, a passing expression familiar only to those who knew Osler best. Severe at such moments, grave and inscrutable when at rest, they were warm and glowing and kindly and direct as they met one's glance, and singularly mobile, in a flash sparkling and dancing with merriment as he seized with lightning rapidity the humorous aspects of the situation, and broke into a quick, nervous, or more rarely, when taken off his guard, into a loud, short, hearty laugh. His glance never evaded another's. Steady, penetrating, his eyes looked deeply into your own. Indeed, as was said amusingly and epigrammatically, by Julia Arthur, of the eyes of his favorite pupil, John Hewetson, eyes that were

* Read before the California Medical Association, in general meeting, at the Fifty-Eighth Annual Session, May 6-9, 1929.

not unlike his own, "They looked through you and buttoned behind!"

His manner of speaking was charming. His voice was quiet and even, but rich and sympathetic. His movements were easy and measured; his gait, rather rapid with long, swinging strides. His composure and poise were unusual. He talked quietly, simply, and not very much. He practised himself a virtue which he often praised, the "virtue of taciturnity." But he was a good listener and had an unusual skill in guiding a conversation. If the conversation took a turn of which he disapproved, he could cut it short or change the subject with ease.

I had been told that he had a rather quick temper. This may have been true, but not in the ordinary sense of the word. In the fifteen years during which I saw him nearly every day, I never heard him speak a hasty or an ill-considered word. On very few occasions, three or four only, have I heard him speak severely or sharply. Once, when a silly woman talked to him about his eyes, he seemed to lose his temper and said: "Woman, don't you dare to talk to me like that." His self-control was perfect. Better I think than anyone that I have known, he practised what he preached.

When in thought he had a habit of holding his head a little on one side and stroking his moustache which, in his earlier Baltimore days, was long and drooping. He had a quick wit and a delightful sense of humour. Especially sensible to the incidents of human behaviour, his eye missed little of that which went on about him. When, one hundred years after his death, the little silver-clasped volume in which he set down early incidents in the history of the Johns Hopkins Hospital is opened, there will be revealed, I fear, with that humorous exaggeration with which he loved to embellish these little histories, more than one incident which might embarrass some good citizens of yesterday and today. We who were his assistants had an uncanny sense of mental and moral nakedness in his presence. How we should like to see those pages and to laugh or blush at ourselves as we appeared to others. One day he read us what purported to be an extract from this volume, describing the effect of the appearance of Miss Isabelle Hampton as an applicant for the position of superintendent of nurses on the original board of trustees, a group of more than mature and serious-minded worthies. A killing picture it was. Miss Hampton was a pleasing object, and the behaviour and instant capitulation of the board was told in a fashion that will make some of its members turn in their graves.

To this sensitiveness to the amusing incidents of human behaviour was allied Osler's love of all manner of little practical jokes and mystifications of which so many have been told. For this, at the outset, most of us were unprepared. But we learned soon!

Sometimes, alas, there was method in his innocent appeal to our memory. "Oh yes. Of course, you remember that lovely thing in Walters' Gallery, over the door in such and such a room, etc.,

etc. . . ." Woe to the wretched youth whose embarrassment tempted him to acknowledge a spurious recollection! At the first hesitation he was trapped and exposed.

One cannot think of Osler without the thought of incident after incident of that playful bantering with friends with which his life was filled. Cushing has recorded many.

One day, soon after arriving in Baltimore, he dropped in to see his distinguished colleague X, like himself a bachelor. When the excellent hostess, who looked up to X as did all, with unbounded respect, said that he was not home, Osler asked for "Mrs. X and the children." Before the amazed lady had an opportunity to explain, he apologized profusely and, in feigned confusion, hurried away.

That enigmatic character Dr. Egerton Y. Davis of Caughnawaga dogged his path. After the morning session of a medical congress in Washington in 1893, as we were on our way to luncheon, a stranger greeted him as "Doctor Osler," but, struck by his blank expression, hesitated and said: "This is Doctor Osler, is it not?" "No," replied Osler, "this is Doctor Davis." The stranger was surprised, would have sworn that he had heard him speak but a few minutes before, apologized and passed on. A half hour later at our table at the Arlington, the same man stopped to speak to Jacobi, greeting "the Chief" as "Doctor Davis." Jacobi cast a sly glance at me, and Osler's eyes twinkled.

During his Philadelphia days a patient had been sent to him from Canada, an exceedingly attractive and highly neurotic woman, who was transferred to his friend Doctor S. for a rest cure. At the consultation, as, in the presence of S., he said good-bye to this patient, she suddenly threw her arms around his neck and kissed him. He escaped and went, immediately, to the Philadelphia Club, where, to a group of friends, he told the whole story—about S. Later in the day when S. sought to tell the true story about Osler, he was greeted with derision.

He was the despair of reporters. On one occasion when Doctor Jacobi of New York was to give a lecture in Baltimore, and a reporter asked him for information, he described the tiny little man with his leonine head of gray hair as a "great athlete."

On another occasion at a meeting of the Association of American Physicians a reporter came up to the group where he was sitting, and asked if anyone could give him information about the celebrities present. Pointing to Delafield with his long square-cut beard and serious face, Osler told the reporter his distinctions, and added that one of the most remarkable things about him was that he was an enthusiastic ball player; that it was almost a mania with him; that, even then, he could not see boys playing ball on the streets of New York without rushing out of his house and joining in the game.

And again, there was the patient sent to Doctor M. of Asheville, brilliant, active, enthusiastic, with the explanation that Doctor M. was a charm-

ing man, able and learned and particularly kindly, but very difficult and rather taciturn; at first, the patient might find him a little difficult to approach. Several days later a special delivery letter arrived from the patient saying that Doctor M. had been all that he had been prepared to expect in sympathy and kindness, but he feared there must have been some serious mistake, for he said: "This Doctor M. began to talk so soon as I arrived, and he hasn't stopped yet."

Dear E., the purveyor of the hospital, knew and appreciated the possibilities of the Baltimore markets better than any of us. Living alone in an apartment of two rooms in the hospital, he chose his friends with care and discrimination, and gave them, from time to time, dinners that we are not likely to forget. The "Chief" used to love to talk to him seriously of the unquestionable pathological influence of certain favorite Maryland dishes—of the indubitable relation between crabs and cancer, oysters and arteriosclerosis, terrapin and impotence; and E. later, with laughter which ill concealed a slight reserve of mental perturbation, would say: "There's nothing in that, of course, is there?"

One evening Fitcher saw the Chief in a sharp attack of renal colic which, as he used to relate most entertainingly, had begun just as he was reading a paper of Ebstein's on the passage of round worms marked by bands caused by spasm of the *Ductus communis choledochus*. On the following morning, in the urine, which had been saved and sent to Fitcher's consulting room, was a small stone, a tiny, round, white pebble, which he had picked up in the garden and dropped into the specimen before its delivery.

The Chief's visits were made at nine o'clock—at exactly nine—for he was never late at an engagement. At about five minutes before nine he arrived at the entrance of the hospital and, leaving his hat and stick in an anteroom, stepped into the superintendent's office for a word of greeting, and then to the wards, often stopping on the way to wave his hand to the superintendent of nurses as he passed the door.

For the first seven years there were no undergraduate students in the wards. The visits, however, were always followed by a group of postgraduate students, among whom were men who have since become leading figures in the medical profession. As he entered the ward, followed by the little group which had gathered about him, Osler accosted the nurses usually with some facetious or pleasantly bantering observation, and as he approached the first bed, it was generally in an atmosphere of pleased smiles if not, indeed, of frank laughter.

At the bedside the house officer read the history of the new cases. Usually before this was begun, the confidence and sympathy of the patient had been gained by some odd, quaint, kindly remark. The history read, the Chief examined the patient, always objectively, never demanding information from the laboratory until he had first formed his own impression. If it were a question of an examination of the blood, he always

took a glance at the fresh blood himself. He dictated a note as he went along and with great discretion, sometimes briefly, sometimes at considerable length. The simplicity of his teaching was very striking. He never lectured. He discussed the picture informally with those about him, often appealing to their opinion. It was easy, as he talked, to see that that of which he spoke was the result of wide and well-digested experience. His interpretation of physical signs was based on his own anatomical and pathological observation and physiological knowledge. Always, when possible, he followed his patient to operating room or necropsy table where, again, his experience was clearly apparent.

In that, the second year of the hospital, his consulting practice was not very absorbing and he was much at the hospital; nearly every day. After an hour or two in the wards he paid a short visit to the several private patients, and then passed to the out-patient department, where he walked from room to room, examining and commenting on the interesting cases. These visits also were followed by some of the postgraduate group.

At twelve o'clock on Saturdays he gave a public clinic in the amphitheatre, where one or two patients, brought from wards or out-patient department, were presented. At these clinics, again the Chief spoke with informality and simplicity. There was no attempt at oratorical effect. So entirely informal and simple, indeed almost conversational, was his manner, that, in the beginning, those who had expected to hear finished, rounded, carefully prepared clinical lectures were almost disappointed, and rather puzzled at the reputation Osler had acquired in his five years at Philadelphia.

One day during the early weeks of my Baltimore experience, as we were walking "down town," a distinguished colleague of Osler's in another branch of medical work said to me: "This man Osler. What do you think of him? Do you not think he is an overestimated man?" I agreed that I was surprised at the informality in all senses, of the one or two public clinics that I had heard, and that I was a little puzzled at his great reputation as a teacher; but I told my friend that I was struck by the way in which, at the bedside, he went to the core of things, and that I could not help feeling that he was a remarkably wise clinician. I wonder if my dear old friend remembers that conversation? It was not long before we were one in our feelings about Osler.

Week by week, these simply conducted clinics impressed his auditors more and more. Smoothly prepared exercises they were not. They were far better. In the informal comments of the teacher, in his dialogue with patient, student, and house officer, there was always meat, and his short, quick, spontaneous, epigrammatic comments were sometimes dramatic. Five years later he began what were, I think, the most characteristic and delightful of his hospital or university exercises, namely, the twelve o'clock clinics given in the out-patient department. These clinics were for third-

year students and were supposed to be purely diagnostic. One or two patients, of whom Osler knew nothing, were set apart from those who came to the out-patient department that morning in order to be brought before the Chief. The history was briefly presented, and very often largely elicited by the Chief himself, who examined the patient before the class. These were beautiful demonstrations of how to approach a patient, personally and medically. In the course of time these exercises were often used by outside physicians who brought interesting patients unable to meet the expense of a formal consultation. The delightful personal relations between the Chief and the individual, his quick apprehension of the kernel of the situation, the regular manner in which he proceeded from history to examination, to the discriminating consultation of such further investigations as were necessary, was of invaluable assistance to the students.

Especially striking was Osler's historical interest and knowledge. He was not one who loved to roll under his tongue some meaningless name in connection with a symptom, but he used to refer us to the original description of many pathological processes or methods of clinical investigation with which we were concerned in such manner as to excite our interest in the man and his work. In later years, at the twelve o'clock clinics, he frequently asked the student whom he had called up in connection with the examination of the case, to report a week later, in a brief five-minute paper, on the history of some symptom or clinical phenomenon, referring him to the original book or article. In this way he taught his class far more about the history of medicine than they would have learned from a dry, systematic course of lectures.

At the hospital historical society, which met once a month, he used to request his assistants to read short papers on this or the other distinguished figure in medicine, papers which he discussed always in a fascinating manner, illustrating them commonly with original editions of the works of the individual under discussion. My first real acquaintance with Laennec and Bichat I owe to just such tasks as this set me by the Chief. Interest once awakened was generously rewarded. My little paper on Laennec brought me, as gifts from the Chief, the first four editions of the works of the master.

The first and third Monday evenings of the month were given to medical meetings held, in the early years, in the northeast corner room on the ground floor of the main building and, later, in the amphitheatre. The second Monday in the month was given to the historical club. Informal gatherings about the table in the old library, they were attended by most of the staff. Interesting cases from the wards were presented and discussed, and the progress of work in the pathological and bacteriological laboratories was reported. Welch and Osler always came; often

Halsted and Kelly, and sometimes Newell Martin from the physiological laboratory across town.

The medical school had not yet opened, the laboratories were few, and the gatherings were small and intimate. How delightful were those evenings! Occasionally outsiders reported their observations. Some who can look back to those days will remember an amusing occasion in which the Chief's humour and tact were particularly well illustrated. Dear old Doctor V. appeared that evening with a large package done up in newspapers. Doctor V. was a charming old man chiefly famed for his rippling laugh, and for having read at an important public meeting a paper in which he had referred repeatedly to "the malarial orgasm." He desired on this occasion, he said, to speak to us of an interesting instance of habitual abortion at about the third or fourth month, with regard to the cause of which he had been in doubt. The woman, if I remember, had aborted three times. He had suspected syphilis, but the foetuses, he said quaintly, "were perfectly formed, without spots or eruption." He did not mention the placentae. Finally, in the patient's stools, he had found "the proglottides of a tapeworm." He described minutely the preparation and treatment of the patient while unrolling from their abundant covering of newspapers two large preserve jars and, as he poured the specimens into two tin basins, he concluded with the words: ". . . and at 12:15 noon, she passed this worm," adding plaintively: "I couldn't find the head."

He then raised the question as to whether the worm might not have been the cause of the abortions. The audience had a hard time but behaved with reasonable dignity. When the proper moment came, the Chief, with a quiet twinkle in his eye, stroking his moustache, expressed his interest in the story but said that he could but remember having heard old Sigmund in Wien say that syphilis was the snake that lay at the root of all evil. "I am rather inclined, Doctor V.," said he, "to think that, in this instance, it was, after all, the other worm." The old man chuckled and shook, and the audience gave full vent to its pent-up amusement.

Ah, those library meetings! Few who remember them can think of them without a tender regret. We were all young then, "Popsy," the "Chief," the "Professor," Doctor Kelly, "Counc," Abbott, Nuttall, and all the rest. All were keenly interested in everything, and each in something in particular. It seemed to us then that there never was such a group.

The Chief was charmingly cordial with his staff. Often he invited one or another to dinner; and at midday dinner and supper on Sunday evening, there were always several of the boys. At first he was at the hospital daily, but outside of the hours in ward or out-patient department, and those meals to which the boys were so happy as to be invited, we rarely saw him. To no one alone did he give much time.

One day Lafleur, speaking of him with the affection that all felt, said: ". . . but he is the most impossible man! I never get a chance to

speak with him. Weeks often go by without my having an opportunity to talk with him!"

This was very true, as I came to know before long. Osler knew how to conserve his time. In the fall of 1890, when I arrived in Baltimore, he had already begun his book on the "Practice of Medicine," a work the value of which depended largely on the circumstance that it was the production in great part of personal experience. He had lived for fifteen years by bedside and in laboratory. He had devoted himself single-heartedly to the study of physiology and pathology in its broadest sense. He had himself seen, during life and after death, most of that of which he wrote.

These two years, from 1890 to 1892, were happy moments for such work. His consulting practice was not yet large. In the summer of 1890, when his niece had become engaged to be married, Osler gave up his house and, during the school year, 1891-1892, he lived with us in the hospital, and devoted almost his whole time to the wards, to teaching, and to his book. That was a delightful year for us who were then internes and assistants living in the hospital. His capacity for concentrated work was remarkable. The greater part of his book was written during that year. As I look back it seems to me that his only moments of repose must have been an occasional evening snatched from the usual routine, and a half hour before bedtime which he generally spent in Councilman's room in conversation which was rarely serious, and always delightful.

One evening he had been to the theatre to see Richard Mansfield in "A Parisian Romance." After a few bantering words with Councilman he said, as he left the room, "Oh, by the way, there were two deaths today." "Ah," said Councilman, "what were they?" "Both," replied Osler, "were instances of arteriosclerosis; one, an hemiplegia." "Are there to be autopsies?" said Councilman. "Yes." "At what time shall I do them? Will ten o'clock do?" "Yes, that will do." As we walked down the corridor Osler chuckled. At ten o'clock on the following morning Councilman came to the ward to remind us of the necropsies that he was about to do on the two fatalities in "A Parisian Romance."

One could not live with Osler without being captivated by his personal charm, his extraordinarily quick wit, without being impressed by his learning and his wide general information. He had a remarkable memory. Never have I known one who could read a scientific article so quickly and detect and remember its essentials so surely and so accurately. But he was not so accurate or systematic in recording his references, and some of us can remember hunting long for this article which had appeared in that journal at such and such a date. The memory as to the article and the author were almost always correct. The journal and the date—that was another matter.

He refused flatly to waste time in futile controversy and discussion, and it was hard, if not impossible, to persuade him to enter into any controversy with nurse or superintendent. There

were abuses which he preferred to endure rather than risk unpleasant discussion, and, as Smith has said, on one occasion, in connection with a situation which seemed to us rather dangerous, he advised capitulation because of the threats of the nursing authorities. But he did it skillfully, and within a year the suggestions which had been objected to were proposed spontaneously by those who had been objectors. As he capitulated he said to me: "I long ago made up my mind that the only way to deal with a woman is never to take her seriously." This procedure was with him an art, restricted in its application to neither sex nor age. If he refused to take you seriously, you were helpless and, vexed though you might be, you could not lose your temper with him.

Throughout his life he was master of his own time to a remarkable extent. I know not how he did it. He seemed to be able to slip away when he would, and one could not talk to him of that which he would not hear. Not even his assistant could catch his ear. In his moments of leisure, at meal times, on his way to and from the wards or when talking to private patients, he was always gay and amusing, but neither patient nor friend nor stranger could hold him if he were busy. How he escaped them I could never quite discover. It was almost always through some quiet, amusing, diverting remark which caused a laugh or suddenly changed the subject. And in a second he was gone.

His visits in the private ward were delightful, a round of laughter and gaiety. In one room our poor, old, arthritic friend, Mr. D., who suffered through so many months, was always, through some new bit of nonsense, reduced to laughter until he cried from some twinge of pain caused by the physical activity provoked. And here it was the charming but very loquacious nurse with brittle bones, who suffered, on several occasions, from fractures of rib or arm or leg, who was always greeted by a solicitous inquiry about her jaw. Or again the sad-faced hypochondriac with a treasured store of questions, who was greeted by some salutation so surprising that his train of thought was exploded as by a mine. Or the anxious psychasthenic, who was so quickly engaged in a playful discussion of the colour of the ribbons on her nightgown that she quite forgot the number of hours that she had or had not slept—and always he was gone. How? Where? No one wholly knew.

All the while, on the basis of good anatomy and physiology and pathology, he was showing us boys as he was showing his students later, that he was a masterly diagnostician and, on broader lines, a very wise doctor.

There were those who called him a "therapeutic nihilist" and complained bitterly that he paid little attention to the treatment of the patient. It is true that in his ward teaching, as in the private ward, he did not dwell particularly on certain lesser details of treatment which are often important in daily practice. This part of the instruction he delegated to others. In the private ward he always left these duties to his assistant,

saying that he wished to be considered as a consultant. But in relation to special conditions which he was studying, such as malarial fever, amœbic dysentery and typhoid fever, he went into the treatment with care. If, however, he did not in his teaching give time to the discussion of the details of medication, to the character or the colour or the taste of the menstruum in which the drug might be administered, he did, through his daily intercourse with patients, public or private, teach us how to conduct ourselves with the patient and how to practise medicine. This was quite in character with the conduct of his life. He taught by example, not by precept. He taught us very quickly that medicine could not be practised and that disease could not be treated by rule of rote. He taught us that the treatment of the patient was the most important element in the treatment of disease, that the patient not the disease was the entity. He taught his students to use their minds and stand on their own feet. He taught us not to give medicine unless we had a real reason for it. How often have I heard him say that if one wanted to find a disease for which there was no known treatment of special value, we had but to look at the index in a book on therapeutics for the longest list of recommended therapeutic agents.

His therapeutic influence was very wise. He was not interested in the reckless use of newly introduced preparations, and he was always insistent on the careful and intelligent use of those which were tried. His recognition of the importance of rest as an adjuvant to *vis medicatrix naturae*, and his clear demonstration that the efficacious dose of a specific, as of quinine in malaria, may be materially reduced if the patient be given that rest and general treatment which is desirable, was an important contribution, which is not observed sufficiently in general practice. Many physicians in those days, as today, felt a curious sort of obligation to give the patient medicine. Osler taught his students very clearly the irrationality of this old tradition. He taught us to feel the obligation to be honest with our patients, and especially to avoid doing anything meddlesome or harmful.

At the end of his year in the hospital in 1892, and the completion of the book, Osler was married, and that beautiful, happy, fruitful life at 1, West Franklin Street began. Mrs. Osler, who as I have said, was his perfect complement, brought with her Morris, the melanotic butler, a personage of great affability, discretion and respectability, who guarded the Chief with rare skill. Almost immediately the house became the home and the haven of assistants, house officers, and visiting physicians from all parts of the world. The Chief, as I have said, practised what he preached, and his life was remarkably regular. Breakfast a little before eight; to the hospital at nine, three days in the week. On the other days the mornings were spent in work at home. A cold luncheon at quarter past one, followed by twenty minutes to half an hour's sleep or rest. Consultations at home from two to five. Outside con-

sultations, thereafter. Dinner at seven. At half-past four tea, over which Mrs. Osler graciously presided. Some of those who gathered at afternoon tea were always waiting for a coveted minute with the Chief, which was realized only if he had no outside consultations. More commonly he dropped into the drawing room for a few minutes, talking pleasantly with the group before he left for the few outside consultations before dinner. In the evening he did no set work.

In later years we, who had keys to his house, rarely interrupted these evening hours. When we did run in for a few minutes, Mrs. Osler was generally sitting before the fire and the Chief at his desk, signing the letters of the day, or writing short notes or reading. There was no telephone in his house. Those who desired to make appointments could write or telegraph. This spared him much. He was usually in bed by half-past ten. This was true whether the evening had been spent at home or dining at some medical gathering, for he rarely dined out in society. Wherever he was, he generally disappeared at about ten o'clock.

His life was a rare example of temperance in all things. He smoked, without inhaling, I think, two or three cigarettes after luncheon and dinner. He ate sparingly. There was always wine on his table, usually a decanter of sherry, sometimes red or white wine, but he never drank more than his glass of sherry or, at a large dinner, an occasional sip of wine in addition. Vigorous and naturally athletic, he realized that he who is doing heavy mental work should not burn the candle at both ends. One morning when he was in his fifty-first year, the picture of health and vigour, we came, on the golf course, to a little stream, not more than three feet wide. He started to jump it. Then, reflecting for a second, he stopped and turned to the bridge, saying: "No. I made up my mind that at fifty I would stop jumping streams." The memory of his tolerance and his moderation shines in these days of fanatical and self-righteous intemperance.

Nothing could have been more charming than Osler's relation to undergraduate students. Every Saturday evening the group doing their ward work in medicine gathered at his house. Assembling about the dining table, they discussed the interesting cases in the wards, over beer and sandwiches, while the Chief talked informally of medicine, of men, of books, of history. His talks were illustrated often by the demonstration of treasures from the library which developed into that great collection which surrounds his ashes at Montreal. At these meetings the students came to know the man and to feel his full charm.

In after years Barker and Janeway and I carried on these same evening gatherings. At one of these, as I spoke to the group of Osler, and happened to say that I had never heard him say an unkind word of a colleague behind his back, and more than this, that he never allowed an unkind word to be spoken in his presence, a graduate of some ten years' standing who was visiting me, said: "I know that to be true. One night Doctor — of —, an old assistant of the

Chief's at McGill, was with us at a Saturday evening meeting. He started to remind Doctor Osler about some rather absurd incident at the expense of a colleague, when the Chief abruptly turned and, pointing to the picture behind his back, said: "Do you not think that statue of King Arthur in the church at Innsbruck is remarkably fine?" The old colleague stopped, flushed and embarrassed, while Doctor Osler quickly started another subject.* This was a characteristic incident. Osler taught his students that only he whose tongue was guiltless of criticism could be the friend of every man. The severest word he ever spoke of another was laughingly to refer to him as a "Son of Belial."

But now and then, in the garb of the jester, he told the truth in an unexpected fashion. One evening X. knocked at the door of Y.'s room, where the Chief was sitting. X. was not welcome, a truth of which he had no conception.

Y. groaned and, uttering under his breath some highly uncomplimentary remarks, shouted: "Come in!" "Mercy, X.," said the Chief, "you'd not have come in had you heard what Y. just said about you!"—a remark which confounded Y. but amused the unsuspecting X.

On another occasion a notorious charlatan within the profession, Doctor T. of C., brought me a sealed letter of introduction presenting "Doctor Schunck."

He respected his colleagues. He loved his fellow men. He saw the best in them, and in his presence the best in them always came out. He recognized and by his actions taught us the dignity of medicine as a profession. Sordid discussions as to fees or as to the financial side of practice were particularly unpleasant to him. I am sure that he never speculated on a patient in his life. He knew the honorarium that he expected for a certain service. Naturally, as he grew older and the demands on his time increased, his charges were higher, but he never raised his fee to a rich man simply because he was a rich man. He had a horror of the commercialization of medicine. Fee tables, especially, were anathema to him.

He was one of those rare practitioners of medicine who could easily have made a fortune. His professorship brought many obligations in the entertainment of visitors of all sorts. These he met with charming generosity. After fifteen years he took from Baltimore not a cent more than he brought with him, save the income from his book. He loved his profession; he was jealous of its reputation. To think of medicine as a mere trade would have disgusted him.

As the years went by he became an exceedingly busy man. With all his skill in controlling his time the moment arrived, as he once wrote me, when he could no longer have stayed in Baltimore "above ground." And so he went to Oxford.

Some of us who had lived with him day in and day out had always realized that he must one day return to the "old home," which was always

the home of his spirit. We loved him dearly. He had become a part of our life, but few of us, I think, were prepared for the shock that the news of his impending departure gave us. It brought an unexpected sense of personal loss and sorrow, leaving with us something of that strange sensation of age and loneliness and responsibility which comes with the loss of a parent. He had grown into our lives to an extent that we had not realized. How deep this feeling was, was shown by the remarkable spontaneous gathering of his old students which greeted his first visit to Baltimore.

In Oxford, Osler's days were spent in a congenial atmosphere of scholarship among students and books. They were still very active days. His quickening spirit surrounded him with new life wherever he went. Cushing has told us of his open house. I say "his," perhaps I should have said "theirs." From the day of his wedding one could hardly think of Sir William and Lady Osler apart. Revere, the only child, grew to be a charming, promising figure.

The war came out of a clear sky. To Osler, whose international associations were so wide, this was a heavy blow. To this was added the cruel anxiety about his son; and then the crowning tragedy of his death. All this and the broken heart he bore with a high head, and she by his side. With death in their heart, life went on as before. The house remained open to all.

A year later, just after the Armistice, I saw him for the first time in four or five years. It was a shock. Affectionate and cordial as ever, older, his moustache white, there was a quiet, subdued look in his eyes when at rest that was not his, a look that haunted me: ". . . He looks small and although charming and like himself at moments, he has lost the real, sustained snap. He looks small and—how shall I say it—almost like any other nice old man." These words, which I find in my "Notes by the Way," tell a story. The Chief to us was unlike anyone else. To think that he could look like anyone else seemed almost sacrilegious.

But life went on as before. He was among the first to stretch forth his hand to greet and help those who had suffered, without regard to the memories. A physician, he was elected president of the Classical Association. Spring brought new life, and in his beautiful address, "The Old Humanities and the New Science," there was all the ring of the "Chief" of our memory.

In the summer came his seventieth birthday and the July fasciculus of the hospital bulletin, which gave him some conception of what he meant to his friends and students, and made him very happy.

In the fall came the railway strike, and the long, cold journey home from Newcastle, and the empyema. With December and winter came the end.

And then, the nine years of work by his dear cousin, Francis, on "Bibliotheca Osleriana," the great catalogue of his library. And the same open

* This story I have told elsewhere more than once.

house, and the same joyous gatherings of students and disciples, young and old, and Lady Osler as gracious and bright and lovely as ever. The same dear, familiar fireside that was home to so many.

Finally the catalogue was done. The packing cases stood waiting. The morning arrived on which the books which held so much of his heart were to be taken from their shelves and put away for their long journey.

Then, when all was ready, peacefully, Lady Osler left a lonely world, and joined the Chief in the cradle of our loving memories. It was as if his spirit had lingered in her until the work was done.

1208 Eutaw Place.

CARDIOVASCULAR COMPLICATIONS*

PRE- AND POSTOPERATIVE

By HALL G. HOLDER, M. D.
San Diego

DISCUSSION by W. H. Barrow, M. D., San Diego; Madison J. Keeney, M. D., Los Angeles; Francis M. Smith, M. D., La Jolla.

MUCH has appeared in the literature of late years concerning cardiovascular complications in surgical cases. Excellent work, both experimentally and clinically, has been brought forth advancing definite conclusions. However, I am impressed with considerable variation of opinion concerning this subject. To attempt to correlate proved practices in the management of this type of cases is the aim and scope of this paper.

Cardiovascular disease, according to the latest mortality statistics, is the most frequent cause of death. Patients in need of emergency or elective surgical treatment not infrequently show evidence of pathologic changes in the cardiovascular system. These changes vary in degree from very early ones, difficult of recognition, to those of cardiac breakdown or hypertensive crisis noticeable at a glance. Diagnosis and treatment of advanced cases may be done by the surgeon. Recognition of the border-line cases, and especially the matter of prognosis, which is all-important, is not simple. Coöperation with the physician in this specialized field is therefore imperative, as too often our combined resources are meager enough and should always be pooled for the benefit of the patient.

The reactions of the diseased heart muscle can now be accurately studied by means of the electrocardiograph, thereby affording definite information in doubtful cases. It seems well established that heart failure, whether due to abnormal cardiac mechanism as in the arrhythmias or when appearing associated with a normal mechanism as in myocardial degeneration, is the same therapeutic problem in medicine or surgery. As indicated, the recognition and correction of the lighter grades of failure, together with the elimination of possible etiologic factors, is important in estab-

lishing a cardiac reserve for necessary operative procedures.

I. PREOPERATIVE CARE IN CARDIOVASCULAR COMPLICATIONS

In this connection chronic cardiovascular disease is not infrequently perpetuated by coincident surgical burdens. Following adequate preparation, this type of patient stands operative procedures unusually well and, from the standpoint of the cardiovascular system, rehabilitation takes place after removal of recognized hazards.

DIGITALIS

Indications for Digitalis.—Heart failure, whether due to valvular disease, pathologic changes in the heart muscle, or to disturbances of rate and rhythm through the operation of extrinsic or intrinsic causes, is a matter for digitalis therapy. Where heart failure does not exist digitalis therapy is productive of more harm than good. In the thyroid heart without decompensation, digitalis is without effect in controlling the tachycardia. Its use with the idea of stimulating and supporting the heart in severe generalized infections has little dependable evidence to indicate whether or not this practice is beneficial.

Preoperative Digitalization.—Geist and Goldberger⁵ in a series of one hundred operative gynecological cases report 3 per cent postoperative complications in patients previously digitalized as against 8 to 27 per cent in nondigitalized cases. They credited this favorable result to the prevention of a postoperative fall in blood pressure. Lilienthal¹² states: "With or without sepsis it is the power of the heart to adapt itself, which is perhaps the greatest factor in determining resistance. In any event digitalization should be accomplished in the forty-eight hours preceding the operation." Similarly Thomas²¹ in preoperative preparation for prostatic surgery favors complete digitalization. Higgins⁸ feels that preoperative digitalization helps many mild cardiovascular lesions which are not recognizable by the usual clinical methods; especially is this applicable to patients over fifty years of age. In contradistinction to the above opinions Marvin¹³ has studied the electrocardiographic and blood pressure records in the preoperative digitalized and nondigitalized patients, but was unable to note any favorable influence of the drug on the blood pressure or incidence of postoperative complications. In fact, he was led to believe that digitalis possibly caused rather than prevented a postoperative fall in pressure. Maynard¹⁴ gives a well-detailed case in which electrocardiographic study showed a relatively normal heart which had been subjected to heavy digitalis medication over a long period of time in the hope of improving the patient's condition for prostatectomy. Without toxic manifestation or clinical improvement this patient developed dangerous toxic rhythm, including auricular fibrillation. This author concludes that caution should be used in the preoperative digitalization of patients who are considered poor operative risks. Further, Wolferth²² says: "Although there is abundant proof that overdosage

* From the Surgical Clinic of Thomas O. Burger, Clyde J. Osborne, and Hall G. Holder.

*Read before the Seventy-Ninth Meeting of the Southern California Medical Association, November 10, 1928, Los Angeles.

with digitalis will impair the efficiency of any heart, there is not proof that so-called therapeutic dosage either increases or decreases the capacity of the healthy heart. The various pharmacologic demonstrations of digitalis actions on the circulation do not supply the answer to this question. Until such evidence is forthcoming, digitalization of the healthy heart is not to be recommended, no matter how serious the operation."

As the above corresponds with my own experience I am forced to conclude that in the relatively normal heart where there is no evidence of heart failure, digitalis has little if any value. Furthermore, if heart failure does develop following operation, the full effect of the drug can be obtained in such a very short time by the newer methods of massive dosage that there seems to be no need of preoperative digitalization in the absence of heart failure. If, however, before operation there is definite evidence of congestive heart failure, the administration of digitalis is indicated just as it would be if no operation were contemplated and in doses adequate to produce full physiologic effect.

Digitalis Dosage.—The newer method of massive dosage in digitalis therapy as perfected by Eggleston is not routine. It is surprising the number of physicians and surgeons who temporize with the drop method, also using unstandardized mouth and hypodermic preparations, frequently a combination of both, thereby making it impossible to accomplish accurate results. The calculation of proper dosage is of prime importance and, as shown by Eggleston, this should be on the basis of body weight and the minimal lethal dose for animals. For oral administration the whole leaf possesses all the valuable properties of digitalis and is the best way of giving this important drug. The digitalizing dose is approximately 30 to 35 milligrams per kilogram of body weight or about 30 grains of powdered digitalis for the average patient weighing 150 pounds. In general one-half of the total or 15 grains may be given in two doses the first six hours, the remainder in divided doses as required. It is to be emphasized that each patient is a law unto himself so that, following each dosage, careful observations should be made for evidence of the toxic or therapeutic effect. If necessary, maximum effect may be had in from seven to fifteen hours. Similar results with standardized tinctures of digitalis may be accomplished on the basis of one minim per pound of body weight. The therapeutic effect of digitalis in heart failure can be maintained only by continued saturation of the patient with the drug. This amount we arrive at by the rate of excretion as determined by electrographic studies, which is about 20 minims per twenty-four hours when using the tincture of 1.5 milligrams per twenty-four hours with the whole leaf.

In surgical patients where oral medication is impossible rectal instillations have been advocated by Brucke²; Levy¹¹ also gave digitan solution by rectum in doses of from 8 to 20 cubic centimeters and observed a slowing of the heart rate of pa-

tients with auricular fibrillation after an average of two and one-half hours with the maximum effect after an average of nine and one-half hours. The above observations he checked by changes in the T wave of the electrocardiogram.

Pardee,¹⁶ working with the liquid intravenous preparations digalen, digifolin, digitan and digitalin tablets (B. W. & Co.) 1/100 grain per eighteen pounds of body weight, recently determined by electrographic methods that therapeutic doses of the liquid preparations equal to one minim per pound of body weight might safely be given intravenously. This corresponds in the average patient to from 90 to 180 minims or 6 to 12 ampoules of one cubic centimeter each. This information permits complete digitalization, as shown by changes in the T wave, in from two to four hours. The method of dosage recommended for patients who had no previous digitalis therapy is one-half the therapeutic dose at the initial injection, followed at intervals of two hours by the remaining half in four divided doses as needed. Those patients previously receiving digitalis were started on doses equivalent to one-eighth or one-quarter of the therapeutic with subsequent doses as required. Pardee¹⁷ emphasized the need for careful observation on the part of the physician prior to each dosage and particularly cautioned against giving full doses of digitalis to patients who are critically ill. Slowing of the heart is a well-recognized toxic effect, but it is not so well realized that acceleration of the heart or the onset of irregular heart action may also be a toxic digitalis effect. He further prefers the intravenous digitalis preparations to strophanthin because of their wider margin between the slight and the marked toxic dose. Clarke³ in comparing intravenous with intramuscular administration of these solutions found a 27 per cent increase in dosage needed to produce the same effect when the solution was injected the latter way. Absorption after intramuscular administration must vary with the condition of the circulation, and when this is impaired, absorption will be proportionately postponed. Given a desperately ill patient needing digitalis therapy, the intravenous route is the one to be chosen for quickest results. In surgery this method is also available in those cases where oral or rectal administration is impossible. It is not recommended or advisable that intravenous therapy supplant oral except when specifically indicated.

OTHER THERAPY

Rest and Diet.—Other measures in the preparation of the cardiovascular risk not to be overlooked are rest and diet. Habs⁶ regularly practiced certain physiotherapeutic measures in the preparation of these patients. Regarding the value of rest Higgins⁸ reports that approximately 50 per cent of the operative deaths on the surgical service of Saint Elizabeth's Hospital occurred in patients operated upon within twenty-four hours after admission. He concludes that added safety is afforded the nonemergency case when at least a thirty-six-hour preoperative hospital period is provided. The important effect of a high carbo-

hydrate diet, particularly the sugars, in cardiac failure for nutrition of the heart muscle, is emphasized by Smith.²⁰

Theophyllin.—Recent reports by Musser¹⁵ and Smith²⁰ are encouraging relative to the use of theophyllin in (1) hypertensive heart disease, (2) angina pectoris, (3) coronary thrombosis, and (4) the cardiac failure of arteriosclerosis. Dilatation of the coronary arteries is produced by this drug, thereby increasing the circulation to the heart muscle, resulting in relief of pain in these conditions to a remarkable degree. Theophyllin in doses of 2 or 3 grains after meals has frequently been administered over a considerable period of time without evidence of toxic effect.

Hypertension.—Patients suffering with so-called essential hypertension tolerate operative measures surprisingly well, especially if the proper choice of the anesthetic is made. Gager⁴ recently called attention to the marked benefit of the use of potassium sulphocyanate for lowering the blood pressure in this type of case. Malignant hypertension from whatever etiology usually terminates fatally in about two years. These patients are poor risks for any operative procedure. Only emergency operations are justifiable.

II. POSTOPERATIVE CARE IN CARDIOVASCULAR COMPLICATIONS

Under this heading, shock and pulmonary embolism will be considered.

SHOCK

Nature of Shock.—Shock, whether occurring before or after operation, is the same phenomenon, denoted by a condition of acute circulatory failure with prostration, rapid feeble pulse, and diminished blood pressure. In contradistinction cardiac decompensation denotes chronic circulatory failure with cyanosis, edema, and visceral congestion. Much confusion has resulted from a lack of complete differentiation between these two conditions, which are different not only as to chronicity and etiology, but also in regard to pathologic physiology and in response to treatment. Shock is encountered most frequently in surgical patients. The most common causes of clinical shock are the following: (1) acute hemorrhage, (2) prolonged inhalation anesthesia, (3) extensive traumatizing wounds, (4) terminal stage of acute infections, (5) pulmonary embolism or coronary occlusion, (6) collapse caused by heat, (7) excessive manipulation of the abdominal viscera at operation, (8) fracture of the long bones, (9) moribund states from any cause.

In spite of the numerous investigations of shock, especially of traumatic shock in late years, the disturbances of circulatory function are poorly understood, and present methods of treatment are far from satisfactory. Without entering into a discussion of the numerous theories with associated experimental work regarding the mechanism of shock, permit me briefly to outline the generally accepted view. It is primarily believed that shock is the result of a diminished circulating blood volume, initiated in one instance by

blood loss as in hemorrhage, and in the other by capillary dilatation from histamin-like poisons, splanchnic vasodilatation causing loss of circulating blood into the body. The following is the supposed sequence in shock from hemorrhage: (1) diminished blood volume; (2) vasoconstriction; (3) decreased caliber of the peripheral arteries producing diminished venous pressure and decreased minute cardiac output; (4) slight diminution of arterial pressure; (5) further compensatory vasoconstriction; (6) further reduction in the caliber of the peripheral vessels with increased reduction of minute cardiac output giving diminished flow through the medullary centers, thereby increasing carbon dioxide tension and associated overventilation, resulting in slight alkalosis; (7) moderate fall in blood pressure with increased diminution of the minute cardiac output; (8) oxygen intake less than oxygen requirement, producing acidosis and hyperpnea; (9) great fall in blood pressure; (10) exhaustion of the vasoconstrictor and respiratory centers with resulting death.

Treatment of Shock.—Blalock¹ reports some interesting experimental findings regarding the use of certain drugs in the treatment of shock.

Digitalis produced a diminution in minute cardiac output, the degree varying from 2 to 45 per cent, and was in general proportional to the amount of the drug given. Similar results were obtained by Harrison and Leonard,⁷ who concluded that the drug should not be given in shock. Of the several therapeutic measures studied by Blalock, digitalis was the most consistently harmful and has uniformly been without benefit.

Strychnin produced diminished oxygen consumption, diminished pulse rate and diminished cardiac output, causing the author to conclude that its use is either useless or harmful.

Caffein showed an increased oxygen consumption, unaltered pulse rate with varying effect on minute cardiac output. Beneficial effects, when obtained, persisted from thirty to sixty minutes. It was concluded that caffein appears to do some good in mild shock, was of doubtful value in moderate shock, and certainly without value in severe shock.

Epinephrin hydrochlorid showed little alteration of the pulse rate with transitory rise in blood pressure with associated slight rise in minute cardiac output which was poorly sustained, falling subsequently to a lower level than before the drug was given.

Ephedrin showed itself to be more satisfactory than any of the other drugs investigated. Consumption of oxygen was increased and the general condition of the animal improved. The effect on the pulse rate was inconstant, but blood pressure was elevated in each instance with universal increase in minute cardiac output, this rise being well sustained, lasting from one to two hours.

In similar experiments *saline infusion and blood transfusion* were found to produce the greatest immediate and permanent benefit.

Regarding the therapy of shock it is to be concluded that drugs are relatively useless compared

with those measures which tend to restore blood volume, such as saline or saline and gum acacia infusions or the transfusion of whole blood. The effects of drugs may be summarized as follows: digitalis is always harmful; strychnin is useless; epinephrin is uncertain and fleeting in its action; caffeine is slightly beneficial when shock is not severe; ephedrin was the best of the drugs studied, and is capable of exerting a well-sustained action until more adequate methods can be employed.

PULMONARY EMBOLISM

Rowntree¹⁹ reports that pulmonary embolism accounted for 9.6 per cent of the deaths after laparotomy in 1926, more than 6 per cent of the postoperative deaths during the last ten years, and far more than 7 per cent of the total postoperative deaths during the history of the Mayo Clinic. Experimental and clinical work on this subject is inconclusive. Pelvic operations are followed by a higher per cent of embolic deaths. The sources of the emboli are obviously important. Attempts to decrease the incidence of pulmonary embolism have for the most part been directed toward early movements and breathing exercises with an idea to increasing the vigor of the blood flow. Much remains to be learned about this tragic complication.

III. ANESTHESIA

In the cardiovascular risk the type of anesthetic is a most important consideration, in addition to a carefully planned and skillfully executed operation. Inhalation anesthetics vary in degree; all exert a deleterious effect on the compromised cardiovascular system. Regional anesthesia here serves a useful purpose, as it is without harmful effect on any vital organ, metabolic equilibrium is undisturbed, thereby making for prompt recovery. In a recent article on spinal anesthesia I⁹ detailed the advantages of this anesthetic for poor operative risks.

As Lahey¹⁰ has shown, rehabilitation of the patient with cardiovascular disease may often best be accomplished by removal of coincident surgical burdens as toxic goiter, pelvic tumor, or troublesome gall bladder.

Coöperation of the cardiologist, anesthetist, and surgeon will markedly lower the mortality in those surgically treated in this apparently hopeless group with a surprising degree of restoration in many cases.

SUMMARY

1. Preoperative digitalization in the normal heart is of no value and potentially is productive of more harm than good.

2. In the presence of heart failure digitalis should be administered according to the method of Eggleston, using either the powdered leaf or standardized tincture. When intravenous medication is necessary digitalization may be accomplished in from two to four hours by the use of the solutions recommended by Pardee. These are

to be preferred to the use of strophanthin because of their greater margin of safety.

3. Caution in the use of digitalis in critically ill patients should be exercised. Careful observations for the therapeutic or toxic effect should be made frequently.

4. The use of potassium sulphocyanate in essential hypertension and theophyllin in coronary disease is of frequent benefit in the surgical preparation of this group of patients.

5. Shock is acute circulatory failure in contradistinction to the chronic circulatory failure of cardiac decompensation. Both are different as to pathologic physiology and response to treatment.

6. Drugs, with the exception of ephedrin, are of no value in the treatment of shock. This is particularly true of digitalis. Ephedrin is shown to exert a well-sustained temporary action.

7. Those measures which tend to increase blood volume such as saline and gum acacia saline infusions or transfusion of whole blood exert the greatest immediate and permanent effect in the treatment of shock.

8. Regional anesthesia is preferable for the cardiovascular risk.

9. Removal of surgical burdens is frequently the first step in the rehabilitation of patients suffering with cardiovascular disease.

10. Coöperation of the cardiologist, anesthetist, and surgeon will markedly lower mortality in this apparently hopeless group.

1301 Medico-Dental Building.

REFERENCES

1. Blalock, Alfred: Mechanism and Treatment of Experimental Shock: I. Shock Following Hemorrhage, *Arch. of Surg.*, xv, 762, November 1927.
2. Brucke, Karl: Ueber Rectale Digitalisbehandlung, *Deutsche med. Wchnschr.*, liii, 1530, 1927.
3. Clarke, N. E.: A Comparative Study in Digifolin Administration, *Am. Jour. Med. Sciences*, clxviii, 201, August 1924.
4. Gager, L. T.: The Incidence and Management of Hypertension, with a Note on Sulphocyanate Therapy, *Journ. A. M. A.*, xc, 82, January 1928.
5. Geist, S. H., and Goldberger, M. A.: Effect of Preoperative Digitalization on Postoperative Complications, *Ann. Surg.*, lxxviii, 693, 1923.
6. Habs, Pra. und Postoperative Kreislanftherapie, *Deutsche med. Wchnschr.*, lii, 2160, 1926.
7. Harrison, T. R., and Leonard, B. W.: The Action of Digitalis on the Cardiac Output of Dogs, *Jour. Clin. Investigation*, iii, 1, 1926.
8. Higgins, W. H.: The Influence of Circulatory Disturbances on Postoperative Mortality, *Virginia Med. Monthly*, liii, 670, January 1927.
9. Holder, Hall G.: Spinal Anesthesia—With Special Reference to the Use of Ephedrin, *Calif. and West. Med.*, xxix, 246, October 1928.
10. Lahey, F. H.: The Rehabilitation of the Cardiovascular Patient, *Surg., Gyn. and Obst.*, xlii, 179, 1926.
11. Levy, R. L.: Rectal Digitalis Therapy: *Arch. Int. Med.*, xxxiii, 742, June 1924.
12. Lilienthal, H.: Resection of the Lung for Suppurative Infections, *Ann. Surg.*, lxxv, 257, March 1922.
13. Marvin, H. M.: Carmichael, M., and Pastor, R. B.: The Electrocardiogram and Blood Pressure

During Surgical Operation and Convalescence, Arch. Int. Med., xxxiv, 782, June 1925.

14. Maynard, E. P.: The Preoperative Administration of Digitalis with report of an Illustrative Case, Surg. Clin. N. Am., vii, 969, 1927.

15. Musser, J. H., Theophylline Ethylenediamine in Heart Disease Associated with Pain, Journ. A. M. A., xci, 1242, October 1928.

16. Pardee, H. E. B.: Clinical Observations on the Use of Intravenous Digitalis Preparations, Journ. A. M. A., xci, 147, July 1928.

17. Pardee, H. E. B.: The Rate of Absorption of Digitalis from the Gastro-intestinal Tract, Journ. A. M. A., lxxv, 1258, November 1920.

18. Robinson, G. C.: Rapidity and Persistence of the Action of Digitalis on Hearts Showing Auricular Fibrillation, Am. Journ. Med. Sc., clxxv, 121, January 1920.

19. Rowntree, L. G.: Cardiovascular Complications and Their Reaction to Surgery, Surg., Gynec. and Obst., iv, 14, 1928.

20. Smith, F. M.: The Diet and Theophylline in the Treatment of Cardiac Failure, Journ. A. M. A., xci, 1274, October 1928.

21. Thomas, B. A.: Factors Responsible for Reduction of Mortality and Morbidity in Prostatectomy, Journ. A. M. A., lxxxii, 281, January 1924.

22. Wolferth, C. C.: The Therapeutic Use of Digitalis, Journ. Md. Sc., clxxiv, 760, December 1927.

DISCUSSION

W. H. BARROW, M. D. (1207 Medico-Dental Building, San Diego).—The old saying that "if you know only medicine, you don't know that" might well be paraphrased to apply to surgery. Doctor Holder, discussing the cardiovascular patient from the point of view of the surgeon, is to be commended for his comprehensive grasp and clear presentation of the management of this type of case. His conclusions are those of accepted and sound medical practice. In discussion one can only amplify rather than take exception to his statements.

Digitalis therapy in hyperthyroidism should be carried on with greater caution than in cardiac disease from other causes, since toxic symptoms may appear suddenly without the slowing of the pulse or the relief from dyspnea which are usually premonitory indications of digitalis effect. However, keeping this in mind, digitalis should be given when any of the signs of cardiac failure are present. One of these signs often missed is that of transient fibrillation, and it would seem to be good therapy to use digitalis preoperatively on those patients who give any history suggestive of this. Of course, rest in bed and the liberal use of opiates or sedatives are indicated, and especially in thyroid diseases are probably more effective than digitalis.

In regard to digitalis medication in general, it makes little difference what method of administration is followed if one will but choose a method that will bring the patient rapidly or gradually, as the need may be, to the point of saturation and then keep him there. It should be remembered that the patient's weight is not a sure measure of tolerance, and that if digitalis is indicated there is more danger in giving too little than in giving too much. On account of the accuracy of dosage whole-leaf preparations are preferred to the tincture. Other means of administration than oral are seldom indicated.

There would seem to be little justification for giving digitalis as a routine preoperative procedure. Perhaps the good results reported by those who have so used it are due to the fact that especially in old people there is often an unrecognized myocarditis. As O'Hare has shown, there are many cases which on examination have normal heart sounds and normal blood pressure, but where the eye-grounds reveal a retinal arterio-

sclerosis indicative of a hypertension in the past. In these cases the then normal blood pressure is suggestive of myocardial weakness and x-ray will often reveal a modified but still typical hypertensive heart. The use of percussion and auscultation alone on a patient at rest in bed is inadequate for the detection of hidden myocarditis.

The use of theobromin and other xanthin derivatives for the relief of angina and substernal distress in hypertension has become common and it would seem to be good therapy to prescribe one of these drugs preoperatively as a prophylactic in a patient subject to anginal attacks. However, one would question the advisability of giving drugs other than sedatives for the purpose of lowering blood pressure except as a temporary expedient. Hypertension is merely one manifestation of a pathologic condition for which we have no specific drug. Sound therapy consists of rest in bed, and the use of massage, hydrotherapy, sedatives, and possibly a salt-free diet.

Although the type of anesthesia is an important consideration in the cardiovascular case it is remarkable how well certain types of hearts, notably those with an old endocardial involvement, stand the strain of a long general anesthesia.

In estimating the risk of operation one should, as Doctor Keeney intimates, base one's judgment of the cardiovascular system not so much on how much damage there has been, but rather on how much reserve there is for further stress and strain.

✱

MADISON J. KEENEY, M. D. (834 Pacific Mutual Building, Los Angeles).—The familiar statement that only rarely are cardiac cases poor surgical risks is in general true, but to this should be added that the victims of coronary disease, syphilitic aortitis and malignant hypertensive heart disease are always bad risks. Moderate hypertension is not in itself of importance in the average surgical risk.

Rest and digitalis are the sheet anchors in the treatment of the heart which shows evidence of failure of function. Cardiac cases are frequently benefited by the enforced rest in bed, limitation of food and increased elimination during the hospitalization at time of operation. Digitalis is the great helper in congestive heart failure, but it rarely slows or helps a heart of normal rhythm and is of less value in the presence of fever and toxemia. Morphine and sedatives are often of great assistance. Digitalis is of little value in the heart of thyroid cases except in the ones with sustained fibrillation and definite myocardial damage.

The recovery of bad hyperthyroid cases with marked congestive heart failure is one of the outstanding achievements of surgery. Old thyroid cases with permanent myocardial damage stand operation surprisingly well and recover from the other symptoms of the toxemia, but frequently continue to fibrillate.

Quinidin may be useful in restoring rhythm and aiding function, but requires careful selection and observation in its use.

Diuretics of the type of theocin and theobromin are often of aid in unloading the cardiac patient, and novazulol with ammonium chlorid occasionally gives wonderful results, but the fact that novazulol is 30 per cent mercury must not be forgotten.

Oxygen as administered by the Barack tent or other efficient methods may be of value especially in the cases with cardiac embarrassment and lung complications.

Doctor Holder has called attention to the difference between shock and cardiac decompensation and has shown that digitalis is of little, if any, value in shock. The Mayos are enthusiastic over their results in the treatment of shock by the use of 6 per cent solutions of acacia intravenously.

Embolism is possibly induced by impaired function of the heart and, to some extent, by posture on the operating table and in the bed following operation. The Fowler position, with the patient in the position

of a double inclined plane, has been mentioned as favoring thrombosis.

Estimation of the risk of operation because of a cardiovascular condition resolves itself into a question of the efficiency of the heart muscle. Determinations of cardiac efficiency and muscle damage are arrived at by a careful correlation of physical findings and symptoms and, to some extent, by instruments of precision. History, objective and subjective signs and symptoms of impaired function are still of more importance than the detection of changes in the heart itself by stethoscope, x-ray, or electrocardiograph. These latter indicate a change has taken place in the heart, but tell us little of its reserve power and function that cannot as well be determined by physical examination. However, coronary disease and excessive enlargement of the heart both indicate a bad prognosis, and their presence is often only definitely determined by the electrocardiograph and x-ray, and these aids are of real value in prognosis in many cases.

✽

FRANCIS M. SMITH, M. D. (Scripps Metabolic Clinic, La Jolla).—Any discussion of the considerations to be given the circulatory system in coping with pre- and postoperative cardiovascular complications must concern itself with a many-sided problem. Doctor Holder has made an exemplary study of the problem and little can be added to his presentation. A few points only will be emphasized.

Since as surgeon, anesthetist, and consultant we are concerned in bringing the patient through the indicated surgery and required anesthesia, we must first give careful consideration to the general condition of the patient in its bearing on the adequacy of the myocardium in sustaining a load, especially any extra load.

There seems to exist in the minds of the internist and surgeon alike a confusion between heart disease and heart failure; in reality a very sharp distinction does exist, the importance of which increases as the necessity for surgical intervention arises. One need only recall the large number of persons with definite cardiac disease leading essentially normal lives for every one person incapacitated by heart failure. And the problem then is to make this differentiation.

Adequate history of the patient's response to effort as tested by his or her daily life in its many-sided activities, both physical and mental, is beyond doubt the most essential source of information regarding the functional condition and reserve capacity of the heart muscle. Thus it becomes a most important avenue for determination of the degree of surgical risk as regards the cardiovascular system. Augmenting the history by correctly evaluated physical findings, especially evidence of visceral congestion and the less important, though occasionally clinching instrumental data, we arrive at an exact and therefore comforting knowledge of the nature and degree of pathologic physiology encountered, and treatment can then follow well-established and rational lines. In general, then, it may be said that a diseased heart, regardless of its physical signs, as murmurs, thrills, etc., or its size, can be considered a normal one for the purposes of operation and anesthesia, if it is able to carry on an adequate circulation under normal conditions of life, with the possible exception of the luetic heart.

The facts concerning the use, and somewhat of the abuse, of digitalis as a cardiac medication has been covered by the author and the other discussers. Little need be added. The requirements of surgery in no way alter the indications for digitalis from those experienced in medical practice, which, in brief, are:

1. The presence of congestive heart failure regardless of type of mechanism or nature of cardiac disease found.

2. Presence of auricular fibrillation or flutter with ventricular rate above normal even in the absence of heart failure.

Given these indications digitalis should be administered in full therapeutic amounts or not at all. The dosage, preparations used, method and interval of administration must be carefully individualized.

A final word as to the accessory methods of treating heart failure. The value of certain diuretics should be emphasized. Doctor Kcency has mentioned these which include ammonium chlorid, ammonium nitrate, and salyrgan. There is an important and large group of patients, usually elderly persons having arteriosclerotic or hypertensive heart disease, who ultimately reach a state of chronic congestive heart failure in whom rest, sedatives, cardiac diet, restriction of sodium chlorid in fluids fails of relieving the water-logged condition. Even digitalis is without beneficial effects and not infrequently small doses provoke toxic rhythms, including ectopic beats, runs of fibrillation, coupling and tachycardia. In these patients the ammonium salts and salyrgan, alone or in combination, as indicated, may in a few days work wonders when every method of therapy tried over long periods has utterly failed. These drugs have been repeatedly observed to literally wring a chronically water-logged patient dry with subsequent marked improvement in cardiac reserve as the visceral congestion was removed.

PSYCHOLOGY IN THE PRACTICE OF MEDICINE*

By SAMUEL D. INGHAM, M. D.
Los Angeles

“HOME-MADE” psychology is as old as medical practice. The mass of modern physicians still employ the home-made brand of psychology more or less intuitively and more or less successfully, but without any special training or study, or even any definite idea of how they apply it.

In modern times, in line with the general scientific trend, more attention has been directed to research in psychology. From the older school of philosophy have developed philosophic psychology, analytic psychology, experimental, comparative and genetic psychology, psychology of childhood and of insanity, pathologic and behavioristic psychology, psychology of salesmanship, of business and of love. The elaborate intelligence tests must be included and, last but not least, the Freudian movement, which has largely divided the psychologic world into loyalists and dissenters. It is worthy of special comment that everyone who devotes some attention to psychology soon becomes a psychologic bigot in that he believes aggressively in his own theories and is intolerant of others.

During the past twenty years the world has been inundated by the flood of psychologic literature. Neurologists and psychiatrists have made more or less serious efforts to cull something of practical value from the mass, while the rank and file of medical men have paid it only casual attention and have continued with their more or less efficient “home-brew” methods.

This contribution is a personal confession of faith. In an effort to evolve something of practical value which could be applied to the practice of medicine, and particularly to neuropsychiatry, I have gained certain conceptions and arrived at certain conclusions which will be sketched as well as possible in the brief time available, without going into a detailed criticism of any school,

* Chairman's address, Neuropsychiatry Section, California Medical Association, at the Fifty-Eighth Annual Session, May 6-9, 1929.

method or psychologic sect. To me the matter has appeared as a practical problem. How far can I analyze and explain the mental reactions of my patients? How practical can I make this knowledge in their service? The best way I can present the subject is to sketch my conception of some basic principles of psychologic processes in general.

I confess to being a materialist, and, reduced to its last analysis, my conception is entirely a mechanistic one. Every sensation, every reflex, every emotion, every thought takes place on the basis of physiochemical reactions in nerve structures. As the neuron theory is fundamental in anatomy of the nervous system, so nerve energy, liberated by neurons and transmitted over the axons, is fundamental in physiology of the central nervous system, not only as manifested by physical activities but as including all mental processes. Highly specialized appropriate structural arrangements in a condition of health and vitality are indispensable for all normal activities of the nervous system. These highly specialized structural arrangements exist not only in every human being, but in every animal possessing a nervous system, also in a less complex arrangement in many of the plants, as for example, in the Venus's fly-trap. The inconceivably complex arrangements of these highly specialized nervous mechanisms preclude the possibility of dissecting or even identifying the nerve centers or tracing the nerve pathways concerned with mental functions. The morphologic conception which would explain cerebration on a mechanistic basis leads certain metaphysically inclined psychologists to look disdainfully upon the "morphologically minded neurologists." Frankly admitting the allegation, I will proceed to outline a neurologist's point of view.

According to the theory of evolution, structural development has proceeded from the simplest to the most complex organic forms by infinite series of gradations. By the processes of natural selection and the survival of the fittest, nature has adopted and retained innumerable variations in structure which have been useful to all forms of organic life in meeting their environmental problems throughout the ages.

Successful variations and new capacities always depend upon improvements in structure. Each living thing has developed its equipment to meet certain conditions of its environment. As environments differ, so do the forms, functions, capacities and limitations of living things. The development of connecting and controlling nerve structures has been an essential part in the evolution of specialized organs, as those of sensation and locomotion. Organs of special senses required not only nerves to carry their messages to the brain, but structures there to interpret the messages and memorize them. For each manifestation of nervous energy, including all psychologic processes, appropriately arranged nerve structures must be postulated. The development of the nervous system of animals has proceeded in this manner, and the brain of man is the crown-

ing achievement of evolution in structural perfection and functional capacity.

A WORKING CONCEPTION OF PSYCHOLOGY

For a working conception of psychology it may be useful to speculate as to how certain important neurologic and psychologic activities have evolved, always bearing in mind the anatomic structures concerned as well as the mental manifestations. Thus we might consider, briefly, reflexes, habits (pattern reactions), instincts, emotions and intelligence, and meditate regarding the significance of attention, choice, consciousness and the subconscious, memory, association, reason and judgment, still remembering the appropriately arranged nerve structures upon which these activities depend, without attempting to localize them. If we were not already treading on dangerous ground we might venture further into the field of speculation, in various directions.

Habits.—By some biologic law it appears that successful adaptations tend to be repeated, and frequent repetition leads to better performance. Highly developed adaptive reactions have been called pattern reactions, and habits, acquired pattern reactions.

Instincts., sometimes called inherited habits, might with more conservatism be considered inherited pattern reactions. They have been described as the capacities of animals to perform acts more complicated than simple reflexes in a perfect manner without learning or practice. According to this definition, the instincts are manifested in pure form most frequently in the lower animals because in the higher animals intelligence, learning and practice appear to be necessary for the perfection of many specialized activities. As the animal scale is ascended it is evident that behavior is more and more modified by the influence of intelligence, choice, and practice.

Reflexes.—By the same process by which habits appear, viz., repetition of successful adaptations, certain reactions become automatic or reflex, their activities being called forth by specific appropriate stimuli, and their operation depending upon the so-called "lower" nerve centers. Such reactions, each liberated by an appropriate stimulus, are called reflexes and are, at least for the most part, inherited. Habits and instincts are also called into activity by special appropriate stimuli, and so resemble reflexes, but habits and instincts are more complex and include a participation of the "higher centers." *Conditioned reflexes* occupy a position between the inherited reflexes and instincts on the one hand, and acquired habits on the other. Pavlov, through many years of experimentation, has demonstrated the prominent rôle that conditioned reflexes play as adaptations to environment and, as sensitized emotions are really conditioned reflexes, it is difficult to overestimate their importance.

Intelligence, of course, defies description. For this discussion intelligence is conceived as the information bureau, the newspaper "morgue" as well as the reporter on the street; this department of the mind is concerned with the organs of the

special senses, instruments of precision for detecting sound and light waves, the chemical analysis of gases, liquids and solids, and the physical properties of things contacted. Sensations and experiences are analyzed and recorded. This material is classified and digested by thought processes and filed away for future use. Of much importance in this connection are the decisions and judgments which have the force of precedence and economize time and effort in later adaptations. When sound they promote success, but when they are fallacious or prejudiced they lead to error, failure, or disaster. Intelligence, as here conceived, deals with facts, figures and records as such, in contrast to the emotions which are concerned with their importance.

Attention might be called the focus of intelligence, or perhaps better, its spotlight, illuminating either the untraveled path through the forest, the familiar road to the office or the dusty recesses of memory. But as a spotlight illumines only a limited area of the landscape, so attention reveals to consciousness only a spot in the field of intelligence.

If we pursue our simile in regarding intelligence as the bureau of information, and attention as the spotlight, we might conceive that *consciousness* is the illumined area of intelligence. Consciousness has been described as the state of awareness and, returning to our simile, we are aware only of the things that are in focus and illumined. In general it might be said to deal with the awareness of the relation of things to each other in our environment, and with ourselves in relation to the environment in general. Since it depends upon the normal activity of the sense organs, memory, thought associations and other processes of the intelligence, it would seem that whatever else it may be consciousness might be considered as one manifestation of intelligence. Emotions, on the other hand, do not appear to be factors of consciousness, and active emotions even tend to inhibit it by limiting its field as they do the field of intelligence.

The Subconscious.—If consciousness be conceived as the area in the field of intelligence illumined by the spotlight of attention, the subconscious may then be considered as the vast unillumined areas of the same field which lack the light of attention. That activities take place in these dark areas there can be no doubt, as attested by modern literature and common experience. Exploration beyond the frontiers of consciousness has become a popular indoor sport.

Emotion.—For purposes of this discussion the term "emotion" is used broadly and signifies any nervous reaction which depends upon a feeling tone related to any success or failure, and not only as regards the immediate present, but also in anticipation or in retrospect. From the beginning of organic evolution the question of success or failure has been vitally important to all living things. Success tends to preservation of the individual and perpetuation of the species, while failure tends toward death and extinction. The survival of the fittest is based upon this principle.

As the scale of life is ascended anticipation, realization and memory of successes and failures can be recognized in animal behavior. Anticipation is signalized by desires or fears, realization by pleasure or grief, and memory by satisfaction or disappointment. In this manner it may be conceived that the emotions have evolved, each having developed as a pattern reaction which has proved useful to the species as an adaptation to a special situation. Since it is evident that emotions are spontaneous in their manifestation, or rather that they are manifested as reactions initiated each by its specific stimulus, and that the capacity to react and the manner of reacting is inherited, it seems reasonable to class the emotions with the instincts. They obviously have little in common with intelligence. Emotions may be divided, according to the above conception, into two groups separated by the line of indifference; on the one side those related to success, and on the other those related to failure. Desire, hope, pleasure, and satisfaction are on the positive side of indifference, and apprehension, fear, anger, grief and despair are on the negative.

No attempt will be made here to list or describe all the feelings or emotions, but a word might be said in emphasis of their importance. Speaking broadly, it may be said that all motives take their origin in the emotional field, and, if we can assume that human behavior is always based upon motives and impulses, then, speaking more broadly, it might be said that all human behavior is primarily activated by emotions. Furthermore, if emotions can be classed with the instincts, human behavior is determined largely by instinctive forces.

Choice.—In situations where two or more possible courses of action are open, only one of which can be followed, a choice becomes necessary and that course is chosen which offers the most to the chooser, either by gratifying an immediate desire, or by promoting future success. Choice is, therefore, the process of selecting the most desirable thing in sight, with or without due consideration of the chances of obtaining it and the difficulties or dangers incident to the effort. It is a decision in favor of one of two or more claimants. It is a play of the emotions and at times a serious conflict. Each of two incompatible desires presents its heated argument, emphasizing facts furnished by intelligence which seem favorable to its course and belittling those intelligent truths which seem unfavorable. The desire that wins the decision is either the one that has the best array of facts, or the one that is the most emphatic. Many a choice is made against the preponderating weight of intelligence because of the force of emotions. Man in his position on the heights of intelligence not only enjoys a wide range of choice, but often suffers from it. To be effective the exercise of choice must be followed by adequate inhibition of the denied desire.

Will.—Controversies over the definition and significance of will have always been puzzling. It would seem that the exercise of will is the process of putting into execution a choice that has been decided upon, and inhibiting impulses that

tend to interfere. When emotions, utilizing more or less intelligence, have exercised choice to form a decision favoring a certain plan of action, will proceeds to put that plan into operation. It is strong when choice is positive and contrary impulses are successfully inhibited, and weak when decision vacillates and interruptions of the plan of action are permitted. Decision of character signifies strength of will, and indecision, weakness.

ELEMENTS IN AN ANALYSIS OF BEHAVIOR

With a general conception of the elemental processes of psychology as outlined above, we may attempt to summarize and apply them in the analysis of behavior. According to this conception:

Habits are acquired pattern reactions.

Instincts are inherited pattern reactions.

Habits and *instincts* are complex reflexes or pattern reactions which normally facilitate adaptation.

Emotions are instinctive (possibly also to some extent acquired) pattern reactions related to feelings of success or failure.

Intelligence is the bureau of information where facts are collected through the senses, digested by thought and recorded in memory.

Attention is the spotlight of intelligence.

Consciousness is the spot in the intellectual field illuminated by attention.

The *subconscious* is the unilluminated part of the same field, where vague activities occur but which are not illuminated by attention.

Will is the process of enforcing choice and inhibiting unfavorable tendencies.

An important part of this conception is the mechanistic view that each individual is equipped by inheritance with adequate nerve cells and fibers appropriately arranged and connected, and capable of acting and reacting by physiochemistry in a manner to explain all neuropsychiatric activities.

AN EXAMPLE

If we attempt to explain the sequence of events in the performance of a simple act, it may be conceived as follows: A boy sees an apple on the ground which he picks up and eats. What happens? Visual sensations carry the image of an apple to the cerebral centers, where it enters the spotlight of attention and intelligence compares it with the memory of other apples. This information being available to the emotions, desire, prompted by hunger, makes a bid for it (the apple). Caution suggests that the farmer might be looking, but is quieted by a report from the information bureau that no farmer is in sight, based upon a survey of the landscape. Choice decides that the opportunity is favorable, and will takes charge of the situation to enforce possession of the apple, utilizing the habit reactions of walking, balancing, focusing the eyes, and other pattern reactions guided by intelligence. The apple having been obtained, it is then eaten with pleasure and the boy goes on his way with satisfaction. Of course, what happened was not so simple as this explanation would indicate. There were innumerable details, not to mention the

possibility of some obscure sexual meaning back of it all.

In this illustration we can ascribe various of the elemental psychologic processes, such as attention, memory, consciousness, emotions, instincts, intelligence, habit reactions, and will. Each plays its part to the ultimate result of a successful adaptation. Emotions play a predominating part in that they furnish the motives. Intelligence also plays an important part, but is secondary to the emotions since the force of intelligence is always used in the service of some emotion, for the attainment of some desire.

APPLICATION TO MEDICAL PRACTICE

Ill health may be caused not only by primarily mechanical derangements, but also by various emotional reactions which not only interrupt useful physiologic activities but often lead to mechanical derangements as a secondary result, as for example, states of malnutrition, exhaustion and toxicoses, due to faulty elimination, disorders of metabolism, and endocrine dysfunction.

Each patient treated by the physician requires a personality study in addition to a purely physical diagnosis. This is particularly true as regards the neuroses and psychoses, where maladaptations and disturbed emotions are most prominent. The physician must analyze the varying psychologic factors and understand the patient's temperament and mental habits, and be able to predict his reactions under given circumstances. From such a personality study it is usually possible to recognize ignorance and misconceptions, bad habits and impractical selfishness or generosity, pernicious conditioned reflexes which have led to serious maladjustments, which in turn have resulted in failures and corresponding depressing emotional reactions, and often ultimately in a neurosis. To read the sequence backward it might go thus: neurosis, depressing emotions, failures, maladjustments, misconceptions and ignorance, impractical selfishness.

The law of cause and effect holds good in psychology as in physics, and the best way to modify effects is to get at the cause of things, whether it be a diseased appendix or a neurosis. Since neurosis so often takes its origin in ignorance, inadequacy, misconceptions and bad mental habits, the correction of these is of vast importance.

SUMMARY

To return to the question, how can I best serve the needs of my patients, I might summarize as follows:

1. Comprehensive psychologic diagnosis.
2. Reeducation of patient by: (a) Proving to him his errors and their importance. (b) Training him in good habits.
3. Maintaining a truly friendly as well as a constructively critical attitude.
4. Careful avoidance of unfounded statements.
5. Stimulating courage by holding constantly before the patient his most hopeful prospects.
6. Constant attention to the physical health as well as the psychiatric needs of the patient.

As stated in the beginning, this contribution is a personal confession of faith. I might conclude

by saying that I preach and try to practice the creed of cheerfulness, hopefulness, friendliness, truthfulness, frankness in facing facts, courage in meeting issues, persistence in efforts to solve problems and intelligence in effecting better methods of adaptation.

1252 Roosevelt Building.

MOUTH INFECTIONS IN RELATION TO SYSTEMIC DISEASE*

By J. H. MUSSER, M. D.
New Orleans, Louisiana

IN discussing mouth infections in relation to systemic disease, I do not intend even to attempt to cover the whole subject from all angles. It would be beyond the scope of my thesis. Rather I would confine myself to presenting to you the diagnostic importance and the peculiar, possibly pathogenic, relationship of certain types of stomatitis to systemic disease, stressing somewhat the rather remarkable blood pictures that are in some way linked up with mouth infections. From this brief introductory passage it may be seen that I will omit specific infections of the tongue and mouth, such as syphilis and tuberculosis; I will refrain from mentioning the various fungous infections of the tongue which are relatively common in the southern part of the United States; I will pass over local infective processes of the mouth, the stomatitis and gingivitis secondary to poisoning by the heavy metals, the dermatoses of the mouth, the mouth infections that occur in the course of the typhoid state, in uremia, diabetes, pregnancy, and so on. Nor do I propose even to mention the bearing that focal mouth infections have on the production of apparently nonrelated somatic disturbances. I will deal only with the following types of stomatitis:

I. Stomatitis in the Acute Contagious Diseases.

1. Measles.
2. Scarlet fever.
3. Diphtheria.
4. Varicella.
5. Variola.
6. Vincent's angina.

II. Stomatitis in the Deficiency Diseases.

1. Beriberi.
2. Scurvy.
3. Pellagra.
4. Pernicious anemia.
5. Sprue.

III. Stomatitis in Diseases with Peculiar Blood Reactions.

1. Anemia.
2. Hemophilia.
3. Chlorosis.
4. Infectious mononucleosis.
5. Leukemia (acute).
6. Agranulocytic angina.
7. Aplastic anemia.
8. Purpura hemorrhagica.

I. STOMATITIS IN THE ACUTE CONTAGIOUS DISEASES

In some of the acute contagious diseases stomatitis is part and parcel of the general clinical picture and is of considerable diagnostic importance. After all, in the acute contagions, diagnosis is of primary importance because the earlier the disease is recognized and appreciated the more efficacious will be the specific treatment available for the handling of several of these disorders.

Measles.—In measles there are found the small bluish-white spots surrounded by a red areola known as Koplik's spots. This peculiar enanthema is familiar to all. The fact that Koplik's spots can be observed satisfactorily practically only in bright daylight is not generally appreciated, and explains why frequently they are not seen because the small hand light, very generally used to examine the mouth, does not give proper illumination.

Scarlet Fever.—The angina of scarlet fever is one of the important diagnostic criteria of the disease, but equally important, I believe, is the examination of the tongue. The bright red tip and edges with a whitish coat on the dorsum presents a characteristic picture, and the disappearance of the white fur twenty-four to forty-eight hours afterward clinches the diagnosis, but it is unwise to wait until the diagnosis is clinched because the prompt administration of scarlet fever serum produces a rapid amelioration of symptoms and rash. Therefore, of particular moment is the appearance of the papillae of the tongue, which are very distinctly enlarged, protruding very pronouncedly from the surface of the mucous membrane. These may best be appreciated also with proper lighting. The tongue should be held slightly at an angle to the light so that a shadow is cast by these protruding papillae which intensifies and brings them out more markedly than when looked at with the light shining on them directly. The buccal mucous membrane also shows evidence of the angina. Sometimes when the throat can be poorly seen, as with a struggling child, the appearance of the rather red, glistening, almost edematous-appearing mucous membrane is a distinct diagnostic aid.

Diphtheria.—Diphtheria of the mouth is rare. In a very large series of patients that I have had the opportunity of observing in the past few years only two cases have occurred, and in both of these, needless to state, the disease was far advanced when admitted to the ward, and extensive diphtheria involvement of the mouth and throat existed. Incidentally, the only patient who has died from nasopharyngeal diphtheria was one in whom the mouth was likewise involved.

Varicella and Variola.—In varicella, ulcers occasionally appear in the buccal mucous membranes, but aside from their annoyance, being painful like all ulcers of the mouth, they are of no moment. In variola pustules may form in the

* From the Department of Medicine, Tulane University School of Medicine.

* Read before the General Medicine Section of the California Medical Association at the Fifty-Eighth Annual Session, May 6-9, 1929.

mouth simultaneously with those of the skin and soon break down and become ulcers.

Vincent's Angina.—Vincent's angina is not generally considered to be a contagious disease. The majority of cases are looked upon as of relatively minor import, the patient being treated by the dentist and often not even consulting a physician. However, this mouth disorder often is an extremely severe one, so severe indeed that it may result in the death of the patient. Whether the Vincent's organisms and the associated spirilla are responsible for the systemic infection is an open question. It may be that the secondary infection that occurs is responsible for the occasional severe toxemia and death in some of the severely poisoned individuals. I have seen patients come to autopsy in whom mouth lesions, however, were the only definite findings to which the death of the patient could be attributed. The organisms of Vincent are saprophytes present in most mouth lesions, but when one sees a strong, well developed, husky young colored male, whose frightfully foul mouth is loaded with these organisms, and in whom only a few bacteria of all types can be found, die within forty-eight hours after entrance to the hospital, one is impressed with the seriousness of the condition and one wonders if under some abnormal stimulation these organisms do not suddenly exhibit a virulency which is not usually present. In the angina of Vincent we have noted some rather remarkable blood findings, findings which would tend to confirm the supposition that a severe toxic reaction is not necessarily due to septic organisms. We now have quite a series of cases in whom a leukopenia was present with relative and absolute decreased polymorphonuclears and with a relative and sometimes an absolute increase in small mononuclears.

The treatment of Vincent's angina seems to be more or less standardized. Oral irrigations with sodii perborate, with very gentle but thorough daily cleansing of the mouth by a competent dentist, and applications of arsphenamin and glycerin, are the usual daily measures. However, with our patients we have found that hydrogen peroxid as a mouth wash, followed by hourly irrigations of 1 to 500 potassium permanganate, seems to work more satisfactorily than other treatment, including arsphenamin intravenously.

II. STOMATITIS IN THE DEFICIENCY DISEASES

Stomatitis exists with surprising frequency in the avitaminoses. In xerophthalmia, mouth lesions are said to be present. In beriberi, gingivitis frequently occurs and resembles somewhat that of scurvy. In scurvy the mouth picture is one of the characteristic features of the disease. The markedly swollen, discolored and painful gums, which bleed on slightest trauma, present a picture which is quite typical of the disease. Here also it might be well to note the fact that scurvy is associated with a tremendous tendency to hemorrhage, and exhibits many of the phenomena of the blood dyscrasias.

The next three diseases that I wish to discuss—pellagra, pernicious anemia, and sprue—may or

may not be considered by some as deficiency disorders, but the general consensus of opinion seems to be that pellagra at least, pernicious anemia probably, and sprue possibly may be due to the absence of some necessary accessory food factor. Absence of the pellagra-preventing factor in the diet is certainly responsible in many cases for pellagra, a condition in which we find a quite typical beefy red tongue, which is painful and which may be accompanied by inflammation of the mucous membrane of the mouth elsewhere, though this is rare. Pellagrins who have had the disease over a long period, particularly, have chronic tongue lesions which resemble closely leukoplakia. In pernicious anemia a smooth, glossy, bright red tongue, contrasted with the pallid mucous membrane of the mouth elsewhere, presents a quite important diagnostic criterion of the disease. The atrophy of the mucous membrane giving an opalescent, shiny appearance occurs during the periods of exacerbation of the disease, whereas during the periods of remission the appearance of the tongue is far from typical. The relation of the glossitis to the pernicious anemia is not known, despite the fact that William Hunter laid considerable stress upon this lesion pathogenically.

Sprue.—The tongue in sprue resembles somewhat that of pernicious anemia and pellagra. As with pernicious anemia the acute stages of sprue may be associated with a smooth, red and glistening tongue, a glossitis which at times may only involve the tip and edges or one side of this muscular structure. Chronic recurring sprue is often associated with a tongue which has become badly cracked and fissured. Sprue may not be classified by most writers as a deficiency disease, but the close resemblance of the disorder to pernicious anemia, the magnificent improvement which results under the proper dietetic care, and the absence of any known cause of the disease, certainly suggests this possibility.

It might be well to observe that in all the deficiency diseases enumerated above, with the possible exception of beriberi, blood changes are a rather remarkably consistent feature.

III. STOMATITIS IN DISEASES WITH PECULIAR BLOOD REACTIONS

Anemia.—In anemia a true stomatitis is exceptional, but does occur occasionally, as with any condition which produces a systemic lack of resistance to an infection of any kind. Incidentally, it should not be forgotten that a very potent cause of severe secondary anemias is oral sepsis, so that we may have the one responsible for the other, or *vice versa*.

Hemophilia.—In hemophilia the most outstanding feature in regard to the mouth is the frequency with which we have capillary oozing from the gums. It does not, however, indicate that the condition is anything other than part of the general picture of the disease.

Chlorosis.—In this condition, now so rare and very infrequently seen, in fact, so exceptional are

the cases of chlorosis which have been observed the last few years that the distinguished hematologist, Doctor Cabot, has said that this entity is disappearing from the face of the earth. In this condition the gingival margin often has a bluish tinge, while caries of the teeth is very generally a rapid and disturbing process and there is a marked tendency to periodontal involvement.

Infectious Mononucleosis.—This very interesting pharyngoglandular disturbance takes us somewhat beyond the artificial barriers and limits of the mouth, but this throat lesion is interesting and the relation of the disease to the unusual in blood disorders is so obvious that I should like to speak just a word about the condition. The occurrence of sore throat, enlargement of the cervical and other lymph glands, associated with reduction of the number of granulocytes, with a relative and absolute increase in the mononuclear cells, makes up the invariable findings of the condition. The increase in mononuclear cells, which are true monocytes, is brought about by some unknown agent apparently residing in the pharynx. This apparently is a specific response to this noxious principle and may bear no direct relationship to other mouth lesions which we are discussing, in that the monocyte which is so increased in number is not a marrow cell. However, from the clinical, as well as from a pathogenic or etiologic standpoint, theorizing about the condition is rather an absorbing pastime.

Leukemia.—In acute leukemia ulcerative mouth lesions are almost invariably present. There is a marked increase of the young and immature white cells, whereas the normal adult granular cell, the polymorphonuclear leukocyte, is relatively diminished, occasionally absolutely decreased in number. The organisms of Vincent are found regularly in these ulcerative mouth lesions of acute leukemia. One of the interesting features of this disorder is that the mouth infection develops almost simultaneously with the blood reaction. It has been suggested many times that the necrotic ulcerating mucous membrane may liberate a substance which is lytic to the leukocytes and at the same time stimulative to the tissues which are the progenitors of the white cells. If this is the case, then it might possibly be inferred that the condition of acute leukemia is due to infection rather than analogous to a circulating sarcoma, whereas the chronic type in most of its manifestations resembles closely a malignant disease rather than an infectious one.

Agranulocytic Angina.—That this condition exists as a definite disease entity is doubted by many. However, it is fairly generally recognized as a true disorder of the bone marrow associated with necrotic and ulcerative pharyngeal lesions, occurring most frequently in middle-aged women, in whom there is an absence of septic foci, leukemia, or hemorrhagic diathesis. In the mouths of these individuals Vincent's organisms and spirochetes have been almost invariably present. The reduction in the number of circulating granular cells is most pronounced, so that total counts of

under a thousand appear not to be unusual. That this condition bears somewhat direct relationship to disturbed hemopoietic pathology cannot be gainsaid. Whether or not the necrotic inflammation of the mucous membrane is the cause of the hypogranulocytosis or the hypogranulocytosis is the cause of the necrotic ulcerative changes in the mucous membrane is not known. Weis believes that the whole thing is due entirely to septic infection. Septic infection of the mouth of this type is not uncommon and is seen generally in severe Vincent's angina, agranulocytic angina, leukemia, and aplastic anemia, all conditions in which there is a marked divergence from the normal of the leukocyte picture and in all conditions associated with mouth infections.

Aplastic Anemia.—In aplastic anemia the mouth picture may or may not transcend the other clinical manifestations of the disease. Sometimes, possibly because of errors in terminology, the aplastic type of anemia, so-called, occurs in the late stages of pernicious anemia. However, this does not seem to be true aplastic anemia in which there is a persistent, more or less rapid diminution in the cellular elements of the blood. The true type of aplastic anemia is accompanied by marked reduction in the white cells of the granulocytic series, and is just as much a part of the whole general scheme of the disease as is the reduction in the red cells. True aplastic anemia is a relatively rare disease. It is also associated with ulcerative mouth lesions of several types.

Purpura Hemorrhagica.—Occasionally ulcerative anginas are seen in connection with this blood dyscrasia.

SUMMARY AND CONCLUSIONS

Stomatitis, which occurs in certain acute contagious diseases, deficiency diseases, and in diseases with peculiar blood reactions, has been discussed. In the acute contagious diseases the mouth changes are of considerable diagnostic importance. In deficiency diseases mouth lesions occur with a peculiar regularity. Rickets does not exhibit this picture. In all other possible deficiency diseases which are closely related to, but not definitely proven to be due to lack of certain food factors, mouth disorders of one kind or another are common, and most certainly are of diagnostic significance and importance. If there is any definite pathogenetic significance it is not known. In several of the blood dyscrasias rather pronounced alterations from the normal occur in the mouth. In four leukocytic disorders, infectious mononucleosis, acute leukemia, agranulocytic angina and aplastic anemia, ulcerative mouth lesions are common. In the last three diseases they are invariably present. All four diseases are associated with a leukocytic reaction which, while not definitely of importance, is at least highly suggestive of some interrelationship between these mouth-blood diseases.

1551 Canal Street.

INJURIES TO THE BACK*

ECONOMIC ASPECT IN INDUSTRIAL CASES

REPORT OF CASES

By HALBERT W. CHAPPEL, M. D.
Los Angeles

DISCUSSION by H. G. McNeil, M. D., Los Angeles; Maynard C. Harding, M. D., San Diego; R. W. Harbaugh, M. D., San Francisco; Frederick H. Rodenbaugh, M. D., San Francisco.

ANY discomfort of the back, developing while at work, becomes an industrial accident case. Complaint of pain or disability is rarely made until the person has slipped, fallen, received a blow, or made some movement which has "wrenched" the back.

Frequently the slightest trauma results in prolonged, and sometimes even permanent, disability, owing to the condition of the back at the time of the injury.

UNCOMPLICATED INJURIES TO THE BACK

In the absence of disease or abnormalities, a sudden strain of the back should disable the person for only a few days. Many injuries of that type repair very quickly and without treatment or loss of time from work. Repeated strains, however, cause an inflammation which finally becomes disabling, slow in its response to treatment, and which recurs easily.

Sprains of the back where muscles or ligaments are torn, or a small piece of bone is pulled off, are far more disabling; but these should respond completely to treatment within a few weeks.

Severe trauma to the back more often results in fracture of the body, transverse process, articular facet or lamina of a vertebra, and less frequently to dislocation of a vertebra, its articular facet, or the sacro-iliac joint. The injuries without paralysis should respond completely to treatment in from six to nine months. Those with temporary or partial paralysis should improve up to complete recovery, although this usually takes longer than when paralysis is absent.

BACK INJURY—COMPLICATED BY DISEASE

If disease or abnormality is present at the time of the injury, however slight, a very different result is usually obtained from those just given, because a diseased or abnormal spine is much more prone to strain and very resistant to treatment. Osteoarthritic spondylitis, radiculitis, active or latent Pott's disease, osteochondritis or pyogenic osteomyelitis of the spine, syphilitic spondylitis, or rhizomyelic spondylose, frequently are present before the trauma occurred which the employee believes was the cause of his disability.

Congenital abnormalities of the lumbar and lumbosacral regions are numerous, and are always a potential source of weakness. Six lumbar vertebrae of the long slender type with wide intervertebral spaces give hypermotility and instability during heavy work. The condition frequently encountered in industrial cases, when slight trauma has given marked disability, which yields stubbornly to treatment, is the fifth lumbar

vertebra with its transverse processes very close to the ilia or sacralized, or one or both resembling the first sacral vertebra, or a lack of fusion of the laminae. Deformed or horizontal lumbosacral articulations cause far greater strain to the ligaments during lifting than do the normal joints.

Functional or structural scoliosis makes the back much more prone to strain. Another potentially weak back, which is too frequently overlooked as a cause of the disability, is that caused by poor posture. With the head held forward, the shoulders rounded, the dorsal curve exaggerated, lordosis, the sacrum horizontally inclined, and "lean back" position, the spinal column cannot stand the strain of heavy work.

Many cases of injury to the back are aggravated by prostatitis, pelvic conditions in women, calcareous degeneration of the dorsal and lumbar aortae, or some focus of infection, chief of which are the teeth, tonsils, and intestinal tract. Everted weak feet with flattened arches, tight heel cords and hamstring tendons, or one lower extremity shorter than the other, have often increased the disability in injuries to the low back. Strain of the iliolumbar ligaments, bursitis, traumatic or toxic myositis of the piriformis or gluteal muscles, are frequently causes of the disability and are rarely considered by the surgeon in industrial cases.

As soon as the patient's condition permits, a careful history and thorough physical examination, with skillfully taken x-rays, should be made of every industrial case which has had an injury to the back. The severity, response to treatment, length of disability, accompanying physical condition, and mental attitude to previous accidents must be thoughtfully considered, as one should expect to encounter similar difficulties with treatment, as on previous occasions. The patient too often assumes the attitude that a back injury will never get entirely well. Even though a complete range of body motion, with no apparent muscle spasm or discomfort, has been regained, he will not admit that he is able to work.

The patient who has never been informed that he has sustained a fracture of the back frequently makes a recovery which is not possible when such knowledge has been conveyed to him. Every effort must be made to keep him hopeful that he will completely recover from his back injury.

REPORT OF CASES SHOWING AVOIDABLE LOSSES TO INSURANCE COMPANIES

The following cases illustrate losses to the insurance companies which should have been avoided:

CASE 1.—Male, age 30, laborer, with good physical development, good posture, and normal x-ray findings of the low back, gave a history of straining his back five years ago and of being treated for three months. About two and one-half years later he had had a similar strain and was treated for two months. I saw him a few months after he was discharged, in a bent-over position, being assisted across the street toward a physicians' building. Again, in about two years, after working on a new job for less than one-half a day, he stopped work because his back hurt. Passive treatment was given for three and one-half months with apparently no results. Then the case was transferred and active treatment was commenced at once. He soon obtained a complete, painless range of body

* Read before the Industrial Medicine and Surgery Section of the California Medical Association at the Fifty-Eighth Annual Session, May 6-9, 1929.

movement and was discharged as cured. A careful history which suggested a condition demanding active treatment under rigid discipline should have been taken before beginning the long and expensive passive treatment.

CASE 2.—While raising bundles of wood above his head and throwing them onto a truck, a man, thirty-five years old, "felt something give way" in his low back. He continued work, but pain in the upper lumbar region soon became so severe that he had to stop. The following day the "company doctor" strapped his back. After two weeks the man tried to work, but could not continue because of sharp pain which accompanied each bending movement.

He received various kinds of treatment for nearly three years without any relief. Then the first x-rays of the spine were taken. They showed a fracture of the transverse process of the first lumbar vertebra with nonunion and but small space between the fragments. At operation a bursal sac was found between the fragments and was removed with the outer fragment. In four weeks he returned to work with complete painless range of body movements. X-rays taken immediately after the injury and rigid conservative treatment would have prevented a large loss of money to the insurance company.

CASE 3.—Male, age 39, while working on the top of a pole fell, straining his low back and injuring his right shoulder. Both stubbornly resisted all forms of treatment for several months. X-rays of the low back failed to show any pathology, but those of the dorsal region gave evidence of an apparently healed dorsal Pott's. Many months later the x-ray showed an active process and a large abscess near the old lesion. A Hibbs' fusion operation gave excellent results.

X-rays of the shoulder, which at first did not show any pathology, finally revealed destruction in the head of the humerus and glenoid region with obliteration of the joint space. An abscess developed in the axilla. Pus from this abscess gave a positive guinea-pig test for tuberculosis.

At the time the patient was allowed to work on poles he had an apparently healed dorsal Pott's disease with a well-defined kyphosis. This was a physical condition which contraindicated such strenuous and hazardous work. The insurance company has spent large sums of money and the man is still totally disabled.

CASE 4.—Male, age 57, was lifting a heavy rock to put on a truck and strained his back so severely that he had to stop work. He gave a history of intermittent tremor of both hands for more than two years before he began work for his last employer.

Although x-rays did not reveal any abnormality of the spine or pelvis, the back has stubbornly resisted all forms of treatment, the tremors have greatly increased, and he has become very weak. This man had Parkinson's disease at the time of his last employment, which was exaggerated by the trauma to the back. He is totally disabled with no chance for improvement.

CASE 5.—Male, age 41, while working, received a slight injury to his low back from an explosion in the machine shop. Shortly afterward he became totally paralyzed from the level of the first lumbar vertebra. X-rays did not show any abnormality of the lumbar or pelvic regions. The Wassermann was four plus. The paralysis was due to syphilis of the cord and meninges, and was hastened by the trauma to the low back. After five years of very heavy expense to the insurance company, he is totally disabled. Besides his pension he is still receiving electrical treatments.

CASE 6.—Male, age 34, worked as a laborer only a few weeks when his back became so stiff and painful that he was compelled to stop work. Until very recently his work had been of a light type. X-rays showed congenital abnormalities of the lower lumbar and lumbosacral regions which made a back prone

to strain. The condition responded very stubbornly to treatment. Slight injuries or repeated strains to backs with faulty structure are frequently heavy losses to insurance companies.

CASE 7.—Male, age 51, was carrying one end of a heavy timber when the other end was suddenly dropped, causing a strain to the lumbosacral region. X-rays gave no evidence of injury to any of the vertebrae or to the pelvic region, but showed well-developed osteoarthritic changes of the lumbar spine. The trauma itself should not have prevented him from working, but it aggravated the hypertrophic spondylitis, causing immediate, total disability with treatment until a rating was forced more than two years after the injury. This case is only one of a very large number, the total of which has been and will be a great economic loss to the insurance companies.

CASE 8.—Male, age 37, stepped onto some iron pipes which started to roll, throwing him backward with a twisting motion toward the left. He was unable to continue work because of sharp pains in the left lumbosacral, sacro-iliac and gluteal regions. After several months of daily electric light baking, with the patient's condition growing steadily worse, there was consultation. Because of marked muscle wasting of the left gluteal and thigh regions, the neurologist believed the condition was due to a nerve lesion. As the greater part of the discomfort was in the region of the left sacro-iliac joint a surgeon advised bone graft immobilization of the joint.

Neither of these doctors had examined the left gluteal region, which was done by the third consultant, who diagnosed the condition as piriformis myositis with secondary involvement of the sciatic nerve. Piriformis myositis is not an uncommon injury, responds quickly and completely to treatment, but is rarely considered by the examining physician.

This man returned to full time, regular work in three weeks, but reported for treatment once a week, for a few weeks, when a complete painless range of body and hip motion was obtained.

CASE 9.—Male, age 24, fell from a scaffold, landing in a "jackknife" position on a hard surface, causing a compression fracture of the body of the third lumbar vertebra. There was good alignment of the lumbar vertebra and no paralysis. He was recumbent on a Bradford frame for four months. Then, with a back brace, he used a wheel chair for several weeks, rarely standing or walking. Six months after the accident there was pain in the lower lumbar and lumbosacral regions with marked limitation of body and hip movements. X-rays at that time showed excellent healing of the injured lumbar vertebra.

With a back brace this man should have been walking around during the tenth week, free from pain and with a good range of hip and body movements. After the fourth month he should have been doing light work. Such fractures heal completely in from six to nine months by conservative treatment.

10. A group of cases of crushing fracture of a vertebra with partial or total paralysis below the lesion. Treatment should be commenced immediately, with the idea of having the patient earn a part or all of his living expenses. The attitude of the insurance companies toward these cases is wrong. Not only can the period of treatment be greatly shortened and the liability considerably reduced, but these patients during their entire convalescence can prepare for a new occupation which might prove as remunerative as the one they were forced to give up. The economic loss in this class of cases has been total when many times it should have been comparatively slight.

TREATMENT OF INJURIES TO THE BACK

Among the greater losses to the insurance companies, because of injuries to the back, are conditions which rarely exist in private practice. The paying of compensation and of all the expenses connected with the injury make the person very

loath to return to work, or even admit that he is getting better. Knowing this the doctor should, by using the most thorough methods, start immediately to make a diagnosis as accurate as possible and direct treatment toward a speedy recovery.

Following strains or sprains of the back, there are varying degrees of stiffness. This limitation of motion is due to an inflammatory reaction, which must be prevented from forming strong bands of fibrous tissue in the injured back as the result of the effusion of blood and serum, or prolonging rest until the obstructive bands matured, or by adding injury, by too early passive movement, to the existing early state of repair.

Muscle power cannot be regained as long as the muscle is in any way deprived of its full opportunity for painless movement. It is by a proper combination of rest, muscle relaxation (often by passive means), and muscle action that the injured back recovers its normal range of painless motion. Therefore the one very essential thing to recovery is voluntary effort on the part of the patient. It is of utmost importance to impress on him clearly the fact that his recovery depends entirely on his own persistent and accurate effort. As purely voluntary movements rarely allow a range sufficient to cause pain, the patient may repeat the attempted movements immediately and at frequent intervals during the day, resulting usually in a rapid and complete recovery.

Fractures of the transverse processes of the lumbar vertebrae, or compression fractures of the body of a vertebra, respond to treatment similarly to strains or sprains of the back, only the non-weight bearing period must be longer.

Following injuries to backs which are potentially weak, because of disease, anomalies, or faulty mechanics, early accurate diagnosis and immediate treatment of the aggravating cause, as well as of the injury, is the only means of reducing the great economic loss which accompanies this class of cases. A thorough physical examination, including an x-ray study, before a person is employed would frequently prevent the temporary or permanent disability which results from slight injuries to the potentially weak back. Sociologists and labor unions have objected to such a procedure because it would result in a large number of unemployed. Instead, it would keep a larger number permanently at a type of work which would not be injurious to them.

The routine treatment of prolonged rest in bed, baking, girdles, braces, plaster jackets, extension in bed, and orders not to move, proclaim to the patient that all back injuries are very serious and may never get well. Besides, the back stiffens, movements are painful, and morale becomes very low. Then the insurance company must treat a chronic condition which should have been avoided. Passive treatment of back injuries is a very common, but a very expensive method.

1136 West Sixth Street.

DISCUSSION

H. G. McNEIL, M. D. (939 Pacific Mutual Building, Los Angeles).—Much has been said about back injuries where definite pathology can be demonstrated

by x-ray study, but not enough about those in which the findings are negative and which constitute a fairly large per cent of the cases under observation and many of which come up for permanent disability rating.

Every severe back strain should be treated as a probable fracture of tissue, either muscular, fibrous, or osseous. I am a firm believer in the use of hydrotherapy in some form from six to eight hours daily for the first few days in all cases of severe low back strain. This prolonged and continuous hyperemia is applied to cause rapid absorption of exudation before it can become organized and involve the nerve tissue adjacent to the injury. I believe the involvement of the nerves in the scar tissue is the cause of much of the prolonged pain and disability.

✽

MAYNARD C. HARDING, M. D. (700 Electric Building, San Diego).—Doctor Chappel's paper might well serve as a model for the letters we are constantly called on to write to insurance companies.

I should think medical directors would be sick and tired of reading the words "baking and massage." I have felt for a long time that heat therapy is being overdone, and improperly done. I wish to recommend a return to the more stimulating types of hydrotherapy.

✽

R. W. HARBAUGH, M. D. (350 Post Street, San Francisco).—Since the advent of our compensation laws the treatment of back injuries has assumed a different aspect due to the medico-legal problems which may be involved. An exact diagnosis is the first duty of the attending physician, no matter how trivial the injury may seem. Simply strapping a mild back strain with adhesive tape and ordering hot applications seems to me short-sighted. Each case should be given a complete physical examination. The problem is not always a simple one, as the cases cited in this paper should prove. It is often as difficult as a diagnosis in any other obscure disease of the body. The mental problem is involved in every case and must be recognized and intelligently treated and given its proper valuation by the doctor. The art of handling people and giving adequate assurance at the proper time in simple cases prevents many a traumatic neurosis and prolonged disability.

A narrow man who sees only his own specialty is not the best physician to treat a back case. The routine, systematic physical examination is the one that counts, and the doctors who are obtaining the best results are those whose training and experience do not limit their examinations or viewpoint.

✽

FREDERICK H. RODENBAUGH, M. D. (323 Medico-Dental Building, San Francisco).—The necessity for an early and complete roentgenologic study of the back in all cases of suspected injury is obvious. The exact location of the injury is frequently difficult to determine from clinical signs, and the necessity for a very complete survey of the spine in suspected back injuries is of the greatest importance.

The more frequent occurrences of minor bone injuries, which formerly were suspected and can now be demonstrated, is due to improvement of technique and knowledge of interpretation; and we can expect further advances in this regard.

In no part of the body is the roentgenologist confronted with such difficulties in interpretation and differentiation between injury and disease, with frequent anomalies to further confuse the picture, as in the spinal column.

We believe that a detailed localized study of the spine in stereoscopic films, not trying to include the entire spine on a single plate with only a small portion in focus but studying the vertebrae in detail, will yield sufficient additional information to compensate for the additional material expended and the time involved in such a study.

CARBON ARC VERSUS QUARTZ LAMP IN DERMATOLOGIC THERAPEUTICS*

By MOSES SCHOLTZ, M. D.
Los Angeles

DISCUSSION by H. P. Jacobson, M. D., Los Angeles;
C. R. Halloran, M. D., Los Angeles.

IN looking over current dermatologic literature one is struck by the paucity of clinical references to the therapeutic value of the carbon arc in skin diseases. As was the case with the quartz lamp, its older sister of the therapeutic family, literary references to the carbon arc up to the present time have been almost exclusively limited to commercial pamphlets circularized by manufacturers of carbon arc lamps and carbons. Clinical data contained therein are extremely scant and haphazard, and betray a lack of dermatologic training and competence on the part of their writers.

No modern treatise on skin diseases finds mention of the carbon arc as a therapeutic agency necessary. As yet only one writer of dermatologic competence, Herman Goodman of New York, has contributed to the research and study of the carbon arc; even he stresses the physical and technical aspects of the problem to the complete neglect of the dermatologic, clinical point of view. On personal inquiry I was surprised to find that very few dermatologists use the carbon arc in their work.

PERSONAL CLINICAL EXPERIENCE

My experience with the carbon arc started over two years ago, and in many hundreds of cases was so favorable that the carbon arc has become an indispensable part of my office equipment and is used at least as often as the quartz lamp, both water and air-cooled. My clinical observations started on a purely empirical basis, without detailed knowledge of the physics of the carbon arc, but with a general notion that the carbon arc is merely a mild variety of ultra-violet light. The carbon B of the National Carbon Company was used, twin burner, at the distance of from 18 to 48 inches, 8 to 15 minutes' exposure. Dermatoses submitted to radiation were those in which only mild actinic stimulation was indicated. In all cases appropriate local and systemic medication and attention were supplemented. That the carbon arc possesses perceptible actinic value was demonstrated readily by the fact that an unintentional erythema with a subsequent desquamation was produced in several cases in fair-skinned and radio-sensitive individuals. That the erythema was of actinic nature and was not due to long-waved infra-red and heat rays, was evident from the fact that the skin distance of the exposure was sufficiently long to obviate any discomfort due to heat, that the skin remained normal in color during and immediately after the exposure, and that the erythema with the sen-

sation of heat developed several hours after the radiation.

Speaking generally, the clinical results were fully equal to those from the quartz burner. This peculiar contrast between my highly satisfactory personal experience with the carbon arc and its surprising unpopularity among other dermatologists prompted me to submit this article dealing with the comparative therapeutic values of the carbon arc and the quartz lamp.

PHYSICAL CHARACTERISTICS

A discussion of the therapeutic value of carbon arc can be properly prefaced by exposition of its physical characteristics. The conception commonly prevailing among clinicians is that ultra-violet rays are represented in the spectrum only by the far ultra-violet zone, which emits waves of actinic potency not possessed by any other zone. This conception, which is correct only technically, has been tremendously exploited by manufacturers of the quartz lamp. Therapeutically this conception is only partially true. The other half of the truth is that there are also middle and near ultra-violet zones, which emit ultra-violet waves of smaller, yet sufficient actinic potency for therapeutic dermatologic purposes. In other words, the ultra-violet spectral zone can be subdivided into several zones which emit ultra-violet waves of various actinic potency. The whole therapeutic field of the ultra-violet zone stretches from 2000 to 4000 A. U. (Angstrom units used as a standard measure of ultra-violet rays) of which the far ultra-violet zone occupies the stretch from 2000 to 2300 A. U., the middle zone 2300 to 3000 and the near ultra-violet zone from 3000 to 3900 A. U. The therapeutic field of ultra-violet rays comprises:

Debated antirachitic rays, 2200 to 2700 A. U.
Preferred antirachitic rays, 2700 to 3000 A. U.
Tan-producing rays, 3000 to 3100 A. U.
Erythema-producing rays, 2800 to 3100 A. U.

An analysis of this table shows readily that the actinic value of the ultra-violet zone is not limited to the far ultra-violet zone only, but extends to the middle and near ultra-violet zones up to 4000 A. U. In fact, Pacini, the pioneer American, in the research and study of ultra-violet rays, admits that rays of 2300 to 2970 A. U. contain practically all the rays toxic to protoplasm (meaning by this their biochemical actinic potency).

The early writers and clinicians, blinded by the striking potency of the far ultra-violet zone to produce erythema in a minute or two through the quartz lamp, have completely overlooked, for dermatologic therapeutic purposes, the less spectacular but fully sufficient actinic value of the middle and near ultra-violet zones of 3000 to 4000 A. U., supplied by carbon arc burners. This peculiar and unfortunate fact has delayed for many years the clinical use of the carbon arc in dermatology.

Manufacturers of quartz lamps and carbon arc burners, fighting for commercial supremacy, lay particular stress on the capacity of their respec-

* From the Department of Dermatology, Los Angeles General Hospital.

* Read before the Dermatology and Syphilology Section of the California Medical Association at the Fifty-Eighth Annual Session, May 7, 1929.

tive appliances to produce a large output of ultra-violet rays for the specific purpose of producing a desquamating erythema, or even a blistering dose. Manufacturers of carbon arc burners have succeeded lately, through the introduction of multiple, metal-cored, impregnated carbons, to meet the competitive claim, and now assert with reason that carbon arc burners are also able to produce erythema within a few minutes.

The claim that the quartz lamp produces a larger percentage of ultra-violet rays than the carbon arc is met by the statement that this is only relatively so, as the quartz lamp is operated on a much smaller amperage, and that the actual output of ultra-violet rays by the carbon arc is larger than that of the ultra-violet quartz lamp, because of the much greater intensity of current used by the carbon arc.

CLINICAL EFFECTS

The clinical effects of the carbon arc and ultra-violet rays can be readily predicated from the analysis of their physical characteristics. As cited above, the actinic output of the quartz lamp is limited to the far and middle ultra-violet zones of 2000 to 3000 A. U., while the carbon arc emits rays of the middle and near ultra-violet zone of 2300 to 4000 A. U. and over. In other words, the quartz lamp is capable of producing a quick and intense actinic effect, characteristic of short ultra-violet rays, but of very little penetration. On the other hand, the carbon arc is also capable of obtaining the actinic skin effects sought for in dermatologic therapeutics, though at a somewhat slower rate, and in addition obtains side effects due to the long-waved rays of the infra-red and violet visible zones. This clinical observation is readily substantiated by theoretical data supplied by physicists that bactericidal property is possessed by the rays up to 3600 A. U., and that the tanning and erythema-producing property is possessed by the rays up to 3200 A. U.

The presence of deep penetrating infra-red and other rays gives an unquestionable clinical advantage to the carbon arc over the quartz lamp in dermatoses with a systemic background. It is a common therapeutic idea that the systemic effect of quartz lamp radiation can be considerably enhanced by the production of skin erythema through preliminary radiation by a therapeutic lamp. This idea is based on the principle that the dilatation of the skin capillaries caused thereby facilitates the absorption and penetration of the ultra-violet rays. This combined effect of shorter and longer rays is presented by the carbon arc burner without the extra expenditure of time necessitated by a preliminary radiation in the case of a quartz lamp. Superficial irritation or discomfort that might be expected from the infra-red rays is not observed with the ordinary skin distance of 24 to 40 inches used in dermatologic therapeutics.

All actinic skin effects sought for in dermatologic practice, possibly with the exception of blistering, can be obtained with the carbon arc as well as with the quartz lamp. This means that the clinical field of application of the carbon arc

in dermatology is as large as that of the quartz lamp, with the exception of a very small group of cases calling for blistering effect obtained by the pressure of the quartz lens. On the other hand, the superiority of the carbon arc is clearly evident in the enormous clinical domain of dermatoses with a systemic background. Both the carbon arc and the quartz lamp share, to an equal degree, the therapeutic limitation of inability to absorb lichenoid infiltrates of inflammatory dermatoses, deep infectious granulomata, or malignant tumors yielding only to x-ray and radium.

FRACTIONAL VERSUS MASSIVE DOSES OF ULTRA-VIOLET RAYS

The pivotal point of the controversy between the quartz lamp and the carbon arc is their respective capacity for the quick output of erythema doses. From a clinical point of view, the difference in this regard has been reduced to a negligible degree through the introduction of modern, multiple-cored, impregnated carbons. However, irrespectively of this aspect of their clinical application, the question of the respective therapeutic value of fractional versus erythema doses of ultra-violet rays merits a deeper consideration.

What are the main local effects we are looking for in dermatologic therapeutics? They are: antipruritic, bactericidal, biochemically stimulative and regenerative, and, finally, desquamative-destructive. The first three effects, which meet the clinical indications of the bulk of dermatologic practice, are best obtained by often repeated fractional doses. If the sun spectrum is to be accepted as a cosmic source of actinic energy beneficial to the animal world in health and disease, as a prototype of actinotherapy, then the carbon arc is admittedly the closest approach to the sun spectrum in its physical characteristics. It is also obvious that small fractional doses of actinic energy, frequently applied over a long period of time, are the nearer approach to the sustained effect of the oft-repeated, minute doses of actinic rays administered in natural heliotherapy.

My personal experience bears out fully that small, frequently repeated doses of ultra-violet rays are preferable in all superficial inflammatory dermatoses. The fractional doses are gradual in their effects, safer, and more comfortable to the patient than the large, erythema doses. This is even truer in systemic dermatoses, where large doses are likely to produce violent reactions and lead to relapses and aggravations. In fact, the most common therapeutic error seen in the actinotherapy is that of overtreatment and overexposure to large erythema doses of quartz lamp.

The cases in which blistering and desquamative erythema dosage is indicated constitute, indeed, a very small field of dermatologic practice. These cases are, essentially, local, dry, scaly, mycotic (not streptococcic dermatoses, which are very irritable and can stand only very mild radiation) alopecia areata, psoriasis, discoid patches of lupus erythematosus, etc. Even in these cases, massive doses are merely permissible and not absolutely necessary. The same results can be obtained with

better comfort to the patient, though at a slower rate, by well-timed, repeated, fractional, quarter, or, at most, half erythema doses. The summary of dermatologic experience teaches conclusively that the clinical value of massive, desquamating and blistering doses has been undeservedly overrated by the rank and file of the general profession, who have been misled by the extravagant claims of commercial literature.

MECHANICAL AND TECHNICAL ADVANTAGES AND DISADVANTAGES OF CARBON ARC VERSUS QUARTZ LAMP

From the point of view of mechanical and technical, efficiency and serviceability, I have found that the advantage lies rather on the side of the carbon arc. To begin with, carbon arc burners are easier to start and to handle, require less care, and have less potentialities for getting out of order. There is practically nothing in a carbon arc to get out of order; while a quartz lamp, particularly the old-time type of water-cooled burner, is likely to spring an expensive leak, or crack, or suffer a loss of transparency in the quartz lens.

The major technical advantage of the carbon arc over a quartz lamp is the steady and constant flow of actinic energy from the moment the burner is turned on. There is no necessity to wait until the burner "works up." There is no "aging" of the burner with the carbon arc. There is no deterioration and decrease in actinic output with the aging of the burner, as in the case of the quartz lamp. Due to the possibility of using one or two carbons in twin burners, and due to several types of spectroscopically graded, multiple, metal-cored, impregnated carbons, the carbon arc allows a greater range of therapeutic efficiency and a greater possibility of quantitative and qualitative regulation of actinic output. The carbon arc has the advantage of combining infra-red rays with actinic rays, thus increasing its power of penetration. The carbon arc offers a therapeutic possibility of longer radiation (ten-minute exposure time proved to be sufficient practically in all cases treated) and for that reason with a greater margin of safety of a steady, sustained actinic effect. It offers actinic rays of greater penetration for systemic effects, though of sufficient actinic intensity for local skin effects. The life of a quartz burner is admitted, at best, to be one thousand hours. It is admitted also that short exposures, the kind best suited to the quartz lamp, use it up more than the long ones. There is no burner in the carbon arc to age. The carbons are the only thing to be changed and the only constant item of expense, so low, figuring per individual treatment, as to be negligible.

Are there any technical or mechanical weak points in the carbon arc? There are but few, and those are of minor importance. They are:

1. Formation of ashes, but they are heavy, do not fly, and are easily cleaned.
2. Sparks. A properly adjusted copper screen affords ample protection. In over two years' experience not even a minor accident was recorded.

3. Heat and fumes produced by the carbons are not oppressive, but require proper ventilation facilities in the treatment room.

4. Changing carbons. It is a very simple procedure; it can be done quickly and easily by a nurse.

5. Possibly the most important objection technically is that the carbon arc pulls a considerably higher amperage than the quartz lamp; it requires a much higher fuse protection, up to twenty and thirty amperes, and may call for special electric conduit arrangement.

CLINICAL SELECTION OF CASES

Both on the strength of personal clinical experience and of the analysis of the physical characteristics of the carbon arc and quartz lamps, I feel justified in concluding that, with slight qualitative differences, the actinic value of these two therapeutic agencies is very much the same and, therefore, the clinical field of their application is, in a general way, the same. In the bulk of dermatologic material the carbon arc and the quartz lamp can be used alternately, or may substitute each other, with a proper modification of technique to make up for the inherent differences in spectroscopic characteristics.

To be more specific, the carbon arc seems to be preferable in all cases in which a mild, prolonged and sustained actinic radiation is desired, for example, in babies and young children, blond and fair complexioned individuals with tender and radio-sensitive skin, in regions of the body with tender skin, such as the face, neck, genitocrural region, inner sides of the thighs, etc. Also exudative, vesicular, acutely inflammatory and highly irritable dermatoses, such as weepy or impetiginous eczemas and various forms of streptococcic dermatoses tolerate the carbon arc better than the quartz lamp. The major indication of carbon arc is the systemic character of dermatoses. This encompasses the enormous clinical group composing metabolic and dietetic eczemas, lichen planus, Duhring's disease, senile pruritus, acute generalized psoriasis, generalized and localized tuberculides, dermatoses associated with anemia, malnutrition, and sluggish metabolism, etc. The carbon arc has proved to be very desirable as supplementary treatment in acne, general seborrhea, generalized sclerodermas, and atrophodermas. On the other hand, the quartz lamp would seem to be preferred in cases where localized, intense actinic radiation for a blistering or desquamating effect is desired, such as in patchy alopecia areata, plantar and palmar dry, scaly, trichophytic dermatoses, sluggish chronic circumscribed psoriasis, and discoid patches of lupus erythematosus.

SUMMARY

In conclusion I wish to emphasize the following points:

1. Carbon arc emits ultra-violet rays of actinic potency, less intense than quartz lamp, yet fully sufficient for the dermatologic therapeutic purposes.

2. Carbon arc and quartz lamp cover practically the same field of clinical indications and, with a very few exceptions, can be substituted one for the other.

3. Carbon arc is to be preferred in dermatoses with a systemic background.

4. Carbon arc presents several practical and technical advantages over quartz lamp.

5. Carbon arc is a therapeutic agency of equal value with quartz lamp, and is undeservedly neglected and ignored by dermatologists.

1930 Wilshire Boulevard.

DISCUSSION

H. P. JACOBSON, M. D. (1016 South Alvarado Street, Los Angeles).—I am very glad of the opportunity to discuss this timely paper because of the importance of the subject-matter which it treats. There is no denying the fact that heliotherapy is beginning to occupy quite a respectable position in medical therapeutics, and in the field of dermatology it is undoubtedly gaining in favor from day to day. As a consequence of the favorable accord which this method of therapy is receiving, new generating instruments are constantly being produced by different manufacturers with a view to facilitating their operation and otherwise adding to their therapeutic usefulness. And, as might be expected, the varying modalities produced by the different manufacturers have each their enthusiastic supporters as well as critics, with opinions differing and based upon individual clinical experience. These differences of opinions are, of course, due to the fact that most of the information on heliotherapy at our disposal is mainly empirical and lacks scientific corroboration. Because of that fact clinicians have varying views on the subject and favor different types of modalities for the treatment of similar conditions. In this particular instance Doctor Scholtz is trying to make a case for the carbon arc light which, after a certain clinical trial, has impressed him with a greater degree of merit than the mercury quartz arc.

The mercury quartz arc, as is well known, generates rays of the violet and ultra-violet ends of the spectrum while the carbon arc burner generates, in addition to these, rays belonging to the visible end as well as the invisible infra-red end of the spectrum. Without attempting any lengthy discussion of the physics of these respective rays, it might be said here that the component rays of the mercury quartz arc are comparatively nonpenetrating and their favorable actinic action is accomplished largely through the vasomotor system by means of the sensory nerve endings which reach the granular layer of the epidermis, and not through any direct action upon the capillaries which lie underneath the epidermic layers and, therefore, are not reached by the rays of the ultra-violet end of the spectrum. On the other hand, the carbon arc burner generates, in addition to the nonpenetrating ultra-violet rays, deeply penetrating short infra-red rays which, while characterized by some as mainly heat rays, are considered by other authorities of actinic importance and capable of being transformed into definitely useful electrochemical energy of biological value to the tissues. Again, on account of the red and infra-red rays in the carbon arc spectrum the patients may receive the benefit of larger doses of ultra-violet rays without any resulting erythema because of the admitted erythema allaying properties of the red and infra-red end of the spectrum.

Thus, I whole-heartedly agree with Doctor Scholtz in his favorable attitude toward the carbon arc lamp, though I feel compelled to take exception to his recommendation to employ heliotherapeutic methods in the treatment of such conditions as lupus erythematosus. His main thesis is certainly timely and correct, and I am glad of the opportunity to record my attitude.

C. R. HALLORAN, M. D. (1052 West Sixth Street, Los Angeles).—All artificial light contains ultra-violet radiation in varying amounts. The sun's ultra-violet rays are intense from 397 to 340 μ , and less intense from 340 to 291 μ . Carbon arc lamps give strong rays from 397 to 330 μ , and weak from 300 to 200 μ . Mercury arc quartz lamps give powerful ultra-violet rays from 397 to 300 μ , and strong to 230 μ , and weak to 185 μ .

In the solar spectrum the ultra-violet waves are the shorter wave lengths, and at the other end of the spectrum are the longer heat waves with the light waves intervening.

Since it is the ultra-violet rays of the spectrum that induce the most active chemical change, and we are able to obtain these rays with the mercury arc quartz lamps with greater exclusion of the less beneficial and occasionally harmful rays of the solar spectrum, I fail to see why the carbon arc lamp should be selected as the means of procuring them.

The use of the mercury arc quartz lamps in the treatment of certain selected dermatoses has definitely proved of value. But the methods of application are varied, as are also the results obtained by their application.

The spectrum of the carbon arc lamp more closely simulates the solar spectrum, and their effects are also more similar. But solar rays alone have not proved beneficial in the treatment of any known dermatoses.

A few years hence we will possibly see a great deal of pathology resulting from the present popularity of artificial tanning of the skin.

I cannot share Doctor Scholtz's enthusiasm for the use of the carbon arc lamp as a therapeutic agent in the treatment of diseases of the skin.

DESMOID TUMORS*

REPORT OF CASE

By GEORGE F. STRAUB, M. D.

Honolulu, T. H.

THE term "desmoid tumors" as coined by Saenger characterizes a group of rather rare tumors, chiefly occurring in the abdominal wall, which have their origin in the tendinous structures, the aponeuroses or the inscriptions tendineae of the abdominal muscles. Muscular elements are entirely absent. In the state of more intensive growth these tumors assume the macroscopic appearance of sarcoma, without, however, histologically becoming of a sarcomatous nature. This fact has led various observers in the past to the erroneous assumption that they were dealing with true sarcomata. According to their appearance they were termed fibro-, myxo-, or cysto-sarcoma. While it is true that such tumors at any time may assume truly malignant characteristics, it is equally true that their primary histologic picture has nothing whatsoever to do with sarcoma, and that their origin can be definitely traced back to the normal elements of the aponeurotic fiber.

In passing it may be mentioned that Guyon has pointed to the occurrence of similar neoplasms having their origin from the tendinous structures of the neck. Steinthal¹ cites the simultaneous removal of three such growths from the abdominal wall, the neck and the lumbar region, respectively, in one and the same patient. All three showed the same histologic structure.

* From The Clinic, Honolulu.

MACROSCOPIC AND MICROSCOPIC CHARACTERS

The macroscopic appearance of the desmoid tumor is rather characteristic, insofar as, even in its later stages and after partial degeneration has occurred, we may still recognize its derivation from the tendinous mother tissue by the arrangement of the fibrous tracts. These elements are always much in evidence. In some places they cross each other at acute angles, while in other more vascular regions they are arranged in circular fashion around blood vessels or inflammatory tissue. This distribution in many cases, especially in tumors which have advanced to larger size and those which have undergone secondary inflammatory reactions, gives rise to a definitely nodular, knobby aspect of the growth. According to the time of its existence the desmoid tumor varies in size from a small nodule to the size of a head. The consistency is hard and elastic. It offers a peculiar grinding sensation to the cutting edge of the knife. The cut surface shows a peculiar damasklike sheen. In all other respects its appearance is more or less determined by its location. The extent and polar arrangement is influenced by the structure from which it arises. It generally follows the course of the fascia from which it originates. Desmoids of the median region of the abdomen are as a rule parallel to the long axis of the body, those of the lower lateral abdomen oblique, and those on the side and farther back, transverse. Superficially located tumors result in circulatory disturbances, enlargement of veins and in the course of time in atrophy of the overlying skin even to the point of necrosis, secondary inflammation and ulceration. Deeply situated neoplasms displace or may, by simple mechanical invasion, give rise to destruction of surrounding muscles and other structures.

The microscopic picture—at least in the beginning—is that of a rather hard oligocystic, more or less vascular tumor consisting chiefly of connective tissue of the highly specialized aponeurotic type. The adventitia of the vessels shows direct continuity with the tumor proper which accounts for their inability to collapse and

the tendency to profuse hemorrhage subsequent to incision into the growth. As the neoplasm gains larger dimensions, the various forms of degeneration put in their appearance. This may be succeeded by the formation of cysts containing serous or mucoid material. The breaking of the overlying skin may result in infection with the usual picture—the mobilization of histocytes, leukocytes, and lymphocytes. This is the picture which has caused a number of observers to confuse this type of tumor with malignant neoplasms, particularly sarcoma. Of course, one cannot overlook the fact that a number of cases have been reported which finally did develop malignant characteristics. This, however, was always a secondary occurrence. If connective tissue is at all capable of anaplastic development into sarcoma, then in this case the resulting malignant neoplasm has the same relationship to the desmoid tumor as secondary carcinomata bear to verrucae or adenomata.

ETIOLOGY

Desmoid tumors of the abdominal wall are more frequent in women than in men. Of forty cases reported by Pfeifer,² eleven were men. Ledderhose's³ review of cases cites ninety women and only ten men. Of four cases observed by the author, three were women. Another significant fact is that of the female patients, by far the greater majority had gone through pregnancy and labor before the development of the neoplasm. This brings up the question of the etiology⁴ of these tumors. Although it seems quite reasonable to assume that the strain and possible trauma incident to parturition shares a part in the causation of such a neoplasm, close scrutiny of the cases by Saenger and Ledderhose has not brought



Fig. 1.—Desmoid tumor.



Fig. 2.—Keloid formation around scar.

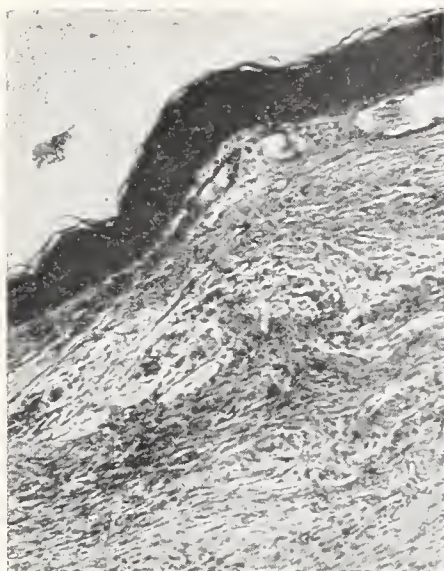


Fig. 3

Fig. 3.—An area from the surface of the tumor mass. The stratified epithelium was apparently stretched, very thin and of few cellular layers. The submucosa was scant, the intercellular substance predominating. There was no distinct border of neoplastic tissue. The neoplastic tissue itself, in this area, consists of rather ripe connective tissue cells with an abundance of intercellular substance, enlarged.

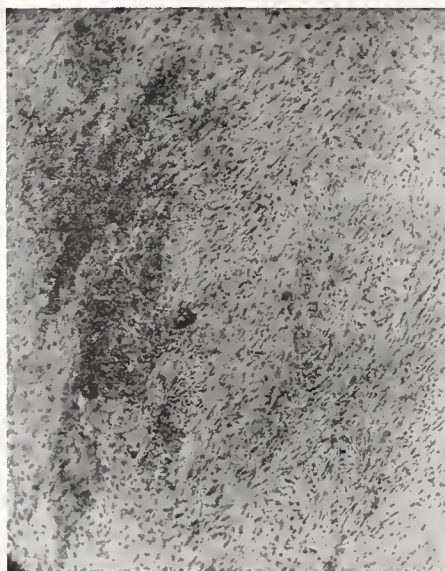


Fig. 4

Fig. 4.—The bulk of the tumor—at least 85 to 90 per cent—was made up of spindle-shaped, quite ripe fibrous tissue cells, the spaces between the cells being filled by a hyaline, myxomatous or mucinous material, with fine fibers. Fresh material, sectioned and stained by polychrome methylene blue, showed this to great advantage.

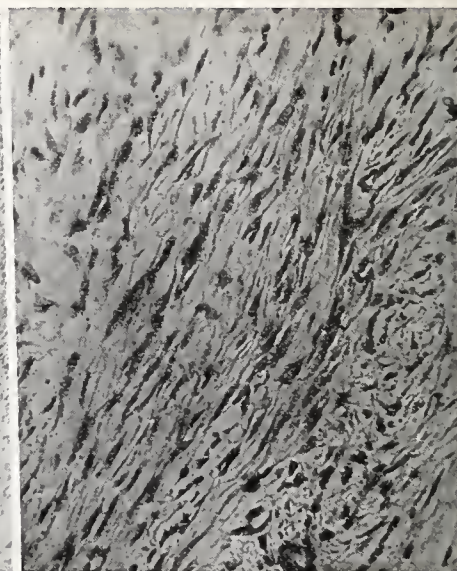


Fig. 5

Fixation in formalin served to so greatly contract the tissue, that the fixation fluid became quite mucinous. Even after fixation and dehydration, the permanent sections show the paucity of cells, their ripe character and the abundance of intercellular material, and especially the angles at which the fibroblasts and their terminal spindles cross each other in all directions, suggesting very broadly their mother tissue, aponeurotic connective tissue.

Fig. 5.—The character of these spindle cells, quite ripe, mature, with well-stained nuclei, nowhere showing mitoses, and the relative quantity of intercellular substance (even after shrinkage) is pictured, in a higher magnification.

to light convincing evidence that trauma is really the cause. The occurrence of desmoid tumors in children reviewed by Pfeifer and the observation of a congenital case in a child four years old by Coenen⁵ certainly do not tend toward substantiation of the traumatic etiology. In how far chronic trauma or irritation may be responsible for the formation of these peculiar neoplasms cannot be decided definitely at this time.

The cases which I have observed all had been well under way for from six months to three or four years before I saw them. The history in all of them showed a slow, gradual development starting from a small nodule in the lower half of the abdomen below the umbilical line somewhere more or less deep under the skin. The onset was so insidious that the exact time of the beginning could in no case be definitely determined and the growth, therefore, went unnoticed for quite a considerable time.

Pain was not a feature of the condition. Even the patient whose case is reported here did not complain much of anything but the discomfort caused by the size and weight of the tumor. It is a characteristic of this type of neoplasm that it does not lead to involvement of the regional lymph glands or metastases in distant organs, unless sarcomatous anaplasia occurs. However, the patients with large size tumors of long standing, as the one reported here, exhibit a decidedly toxic, not to say cachectic appearance.

The tumors observed were solitary, unilocular and well defined. They are most frequent in the oblique abdominal muscles; next in line follows the fascia transversalis and last the linea alba. As indicated above, their development is first slow. After the size of a hen's egg is reached,

the growth is generally accelerated, so that in from one to three years the volume of a man's head is attained. At times, however, the process of growth is much more protracted and extends over a long period of years. A number of cases have come under observation in which the development came to an apparent standstill with calcification of certain areas within the tumor. There is only one case on record, reported by Stubenrauch,⁶ which underwent spontaneous involution and recovery.

DIAGNOSIS

The diagnosis in cases of fairly superficial desmoids is not difficult, if one bears in mind the characteristic orientation which follows the line of the structure from which the neoplasm originates. In cases of more deeply situated tumors the differential diagnosis becomes more difficult. Still, if one succeeds in excluding intraperitoneal and retroperitoneal conditions (liver, spleen, kidneys, pelvic organs, intestinal tract) there remains very little pathology which could simulate the subject under consideration. The history will eliminate traumatic conditions involving the abdominal muscles, such as hemorrhagic cysts and inflammatory processes, which are generally accompanied by fever and sensitiveness on palpation. Fibromyoma of the round ligaments must be thought of and excluded. Thus there remain for consideration only two conditions: fibroma and sarcoma. But here as in many other surgical-pathological situations the biopsy is destined to make the final decision.

Increasing experience has taught us that the prognosis of these cases is good as far as the possibility of definite eradication of the tumor and

lasting result is concerned, this in direct contradistinction to the most benign form of sarcoma, if there is such a thing. In fact, in case of doubt a patient living and free from recurrence and metastasis after a fair interval of time is almost 100 per cent proof that the tumor removed was not sarcoma; this in spite of the diagnosis of malignancy by the most competent pathologist. One author reports local recurrences after a successful operation which, however, were definitely cured by a secondary excision. I have observed a decided tendency toward formation of keloids in three of my patients (desmoid tumor of scar tissue!).

TREATMENT

From the foregoing discussion it follows without argument that the early thorough radical removal of the neoplasm is the method indicated. As the operation, once begun, may terminate in through and through excision of the abdominal wall and laparotomy, the patient should be prepared for such an operation in any case.

REPORT OF CASE

Here follows the report of a case of desmoid tumor of the abdomen which is highly interesting in many respects, and which illustrates a number of points brought forward in the foregoing discussion:

Ch. S., laborer, admitted to the Queen's Hospital September 29, 1927, discharged October 21, 1927.

American-Hawaiian mixture; age 62, married, seven children and wife all well; moderate user of alcohol and tobacco; no gonorrhea or lues.

At the age of seven he fell from a tree and broke the left hip-bone. Otherwise he was always well.

In the middle of 1921 he fell from a bicycle and thinks he struck the left lower abdomen. In the beginning of 1922 he noticed a small nodule about the

size of a hazelnut under the skin of the left lower abdomen midway between the middle of Poupart's ligament and the umbilicus. The tumor grew very slowly and in the course of about one year reached the size of a walnut, and in another eighteen months that of an egg. In 1925 growth became accelerated, so that at the end of 1926 the size of a small head was attained. With this rapid growth there went along a change of the appearance of the tumor. Up to 1925 this had been smooth and was covered with normal movable skin, but then it assumed a lobulated aspect and its cutaneous covering became adherent, gradually thinner and followed the nodular contour of the underlying neoplasm. Finally, in the middle of 1927, the skin broke down in places and started to ulcerate, especially at the lower pole of the tumor. From that time on the patient, who had previously been only slightly inconvenienced by the size and weight of the growth, developed an increasing loss of strength, weight and appetite, and his appearance became that of a cachectic, seriously sick man. At the same time the tumor became increasingly painful, the patient started to cough a good deal, became short of breath on slight exertion, and a cataract developed on his right eye.

When I saw the man first (September 3) he made the impression of an individual suffering from cachexia. The tumor covered the left lower quadrant of the abdomen (Fig. 1) from the midline to the anterior axillary line and from somewhat above the umbilical level, extending to below Poupart's ligament. The neoplasm was the size of a small head, of nodular lobular appearance, quite vascular and showed various areas of ulceration, especially in the inguinal region. The longer axis followed the direction of the fibers of the external oblique muscle. The tumor was foul smelling, and discharging a sanguinopurulent secretion at the base. It appeared to be of fairly firm elastic consistency, was freely movable with the underlying tissue and the abdominal muscles, and did not seem to be connected with any intra-abdominal structures or the pelvic bones. There was no gross evidence of lymphatic or metastatic extension anywhere. Aside from the condition described, the examination of the entire abdomen was negative. Bowel function and stools were normal. There was no disturbance of urination. The examination of the chest,



Fig. 6

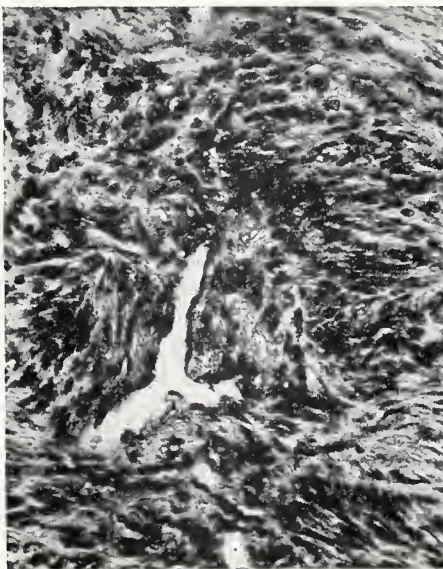


Fig. 7

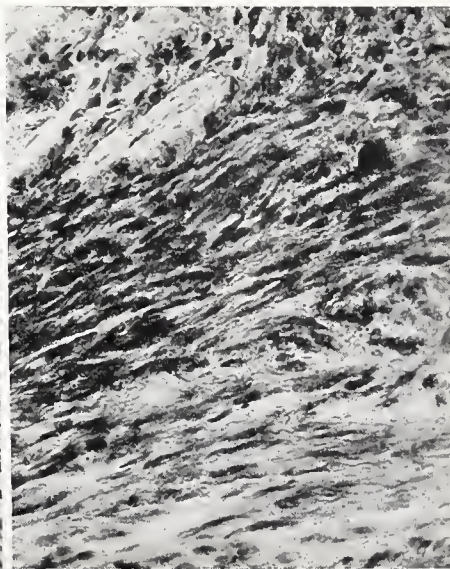


Fig. 8

Fig. 6.—Near the pedicle of the tumor, where the blood supply was quite profuse, and where long-standing infection had caused a reaction, the type of cells was somewhat different. In the infected areas, polymorphonuclear, mononuclear, and plasma cell infiltration clouded or obscured the picture. Adjacent to such areas, the cells of the neoplasm were more recent, younger, but quite ripe. Mitoses were very rare and irregular mitoses not found. The elongated cells were arranged in bundles of fibers, running in all directions, suggesting the familiar architecture of a fibroma of the uterus. The cells themselves varied only slightly in

size; a regularity that detracted from the first impression of sarcoma. The intercellular substance was quantitatively less prominent than in areas in the periphery of the tumor.

Fig. 7.—A blood vessel from near the pedicle of the tumor, with tumor cells, well nourished, young, but ripe, adjacent.

Fig. 8.—Section from near pedicle to show fibrillary character of intercellular substance, in contradistinction to its more myxomatous character in the periphery.

aside from universal low amphoteric râles, did not show any abnormalities. The heart rate was 92. Heart borders, normal. Temperature, 98.6. Blood: hemoglobin, 65 per cent; red cells, 3,800,000; white cells, 8000; polymorphonuclears, 72; small lymphocytes, 26; large lymphocytes, 2; eosinophils, 0; Wassermann reaction negative; Kahn, negative. Stool: no occult blood. Urine: repeatedly negative. Fully developed cataract in the right eye, beginning cataract in the left eye.

A clinical diagnosis was made of desmoid tumor of the abdominal wall with possible secondary sarcomatous anaplasia. Operation was advised and the operative field was prepared for a few days by dakinization and application of potassium permanganate dressings.

On September 4 a biopsy was done by the resident hospital staff. The report from the frozen section was: "Many irregularly growing spindle cells loosely growing—sarcoma type [?]"

On September 9 the patient was operated on. The tumor was removed, the line of excision remaining within normal skin about one inch away from the growth all around. Then the tumor was peeled away from the abdominal muscles inclusive of the external fascia. The inguinal gland area was also excised, although no glands could be felt. No malignancy was apparently encountered anywhere in the line of dissection. A sliding skin flap from the thigh partly covered the wound leaving a raw area of 6 by 4 inches.

The tumor was the size of a coconut and was firmly attached to the fascia of the left external oblique muscle from which it seemed to take its origin. The growth and its attachment was very vascular. No enlarged glands were encountered.

Seven days after the operation, by order of an interne an x-ray treatment of three-fourths of an erythema dose was given with the result that the poorly nourished skin flap became necrotic to a considerable extent.

On October 3, about three weeks after the first operation, the remaining granulating area was covered with Thiersch grafts taken from the thigh. At the same time a few specimens were taken from the granulation tissue for microscopical examination which was negative as far as malignancy was concerned showing only granulation tissue. From then on the patient made an uninterrupted recovery, and up to the time of this report, ten months after operation (July 30, 1928), is entirely well.

I have previously drawn attention to the frequency of keloid formation in these cases. The patient under discussion also developed a number of keloids (Fig. 2) in and around the operative area, an especially large and dense one at the lower pole which necessitated simple cautery division on December 1, 1927, in order to relieve the pull it exerted in the inguinal region.

PATHOLOGICAL REPORT

The pathological report rendered by the hospital laboratory reads as follows:

"Tumor removed about the size of a coconut, irregular in contour. Specimen shows several different structures, was growing in globules. Some globules (1 to 2 inches in diameter) show a strikingly gelatinous structure, others white and fibrous. Microscopic diagnosis: Section 1 shows pale cells with many fibrils between. These cells have a gliomatous appearance growing irregularly. Section 2 shows a very compact cell mass, irregularly growing with deep staining nuclei. This specimen looks like a spindle cell sarcoma. Myxosarcoma 'desmoid.'"

An eastern pathologist to whom specimen slides were submitted pronounced the tumor fibromyxosarcoma.

COMMENT

In the light of the introductory discussion the diagnosis of the local laboratory, as well as of

the pathologist consulted, may be easily understood. But the fact remains that the tumor, in its clinical development, bears all the earmarks of the group "desmoid tumors," as defined by Saenger. Furthermore, the benign course after nearly a year does not speak for malignancy, and that after and in spite of what one cannot call a radical operation and the absence of treatment by radium and in spite of the above mentioned single dose of x-ray which one may look at as stimulating rather than lethal.

In order to complete the picture the writer is submitting photomicrographs and descriptions thereof from the laboratory of the clinic.

401 South Beretania Street.

REFERENCES

1. Steintal: Surgery of the Abdominal Wall, Handb. d. Prakt. Chirurgie Garré, Kuettner, Lexer, 1923.
2. Pfeifer: The Desmoids of the Abdominal Wall and Their Prognosis, v. Bruns' Beiträge, zur Klin. Chir., 1904, Vol. xlix.
3. Ledderhose: The Surgical Diseases of the Abdominal Wall, Deutsche Chirurgie, 1890, Vol. xlv b.
4. Kramer: Contributions to the Etiology and Operation of the Desmoid Tumors of the Abdominal Wall, Arch. f. klin. Chir., 1896, Vol. lii.
5. Coenen: Zentralbl. f. Chir., 1909, p. 124.
6. Stubenrauch: München Med. Wchnschr., 1910, p. 1473.

CALIFORNIA STATE NARCOTIC HOSPITAL*

ITS AIMS AND WORK

By THOMAS F. JOYCE, M. D.

Spadra

THE State of California, realizing its responsibility in the salvaging of the unfortunate victims of narcotic addiction, passed a bill more than a year ago creating the State Narcotic Hospital. This institution was started on property already owned by the state, known as the Pacific Lodge, and is situated about two miles from Spadra, in Los Angeles County, just west of the Valley Boulevard. The property consisted of eight hundred acres of land with one large stucco building capable of housing forty patients and a small personnel. The sum of \$100,000 was appropriated to make the necessary alterations, furnish the equipment, and pay all expenses for the first year. Permanent improvements in the nature of a new sewage disposal system, a new well for domestic service, a steam heating plant, and a modern hydrotherapy room were installed.

Recently a new dormitory building has been opened, housing fifty convalescent patients, and a modern steel fence surrounding five acres of the property adjoining these buildings has just been completed by which it is hoped to reduce the number of escapes from the institution to a minimum.

Next year's budget provides for the erection of an industrial building and gymnasium, where these men will be given instruction in a useful trade in order to provide a means of livelihood after they leave the institution. In the gym-

* Presented at a meeting of Social Service agencies.

nadium, by a competent physical director they will be given instruction in the proper forms of exercise suitable for their needs.

SCOPE OF THE NARCOTIC PROBLEM

The control of the narcotic problem is not by any means a one-man job. Various groups of citizens, working on different angles of the problem, are necessary for an efficient organization to cope with this evil, but I know of no responsibility greater than that which falls upon the shoulders of the medical profession in the humane and scientific treatment of these sufferers. Surely we cannot expect the judges or the sheriffs or police chiefs or social service workers to assume this responsibility. Therefore, at the State Narcotic Hospital, these patients are treated primarily as sick people, suffering from a definite physical disease condition and not simply a bad habit, and they are treated with the same consideration that patients suffering from any other form of disease should be given, irrespective of their past records.

THREE STAGES IN TREATMENT OF NARCOTIC ADDICTS

At the California State Narcotic Hospital at Spadra the treatment of the patients is divided into three stages: one, the stage of preparation; two, the stage of elimination and withdrawal; and three, the stage of convalescence and rehabilitation.

In the first stage we seek to correct any physical defects that are contributing factors to the addiction before we attempt a final withdrawal of the drugs.

The second stage is accomplished by a thorough elimination of the drug under modern methods; not simply depriving the patient of the drug and watching what might happen, but humanely withdrawing the drug from the patient's system in a manner commensurate with the needs of the individual. We know no good reasons for using the so-called "cold turkey" or "kick-out" methods that are employed in some institutions. Our experience has taught us that the patient does not kick it out, the dregs of the drug remaining in the system for variable periods, thereby increasing the patient's suffering and lessening his confidence in his ultimate recovery. Then, again, these methods leave an everlastingly bad impression—one of real revenge on the part of the sufferer, for he knows well that he might have been relieved in a much more humane manner. Furthermore, statistics do not prove that there is anything deterrent in subjecting these people to this sort of treatment. In fact, I am quite sure that if we are going to have any success whatsoever in treating this type of addict it will be only when the most humane and scientific methods are employed. The resentfulness of the addict will be replaced by a degree of confidence and respect for the provider of such treatment. This has been our experience at the State Narcotic Hospital.

Ninety per cent of the patients admitted to the hospital have been the recipients of various kinds of treatment, some having had as many as fourteen different kinds of so-called cures, covering

variable periods of addiction. Two patients sent to us, each had a history of a fifty-year addiction, so you see we are not able to pick favorable cases. We must take those sent to us and, notwithstanding the unfavorable aspects encountered in many cases, we have been uniformly successful in relieving the patients committed to our care, of the pangs of their addiction.

In the third stage of treatment, after leaving the withdrawal ward, the patients are given graduated exercise for a period of two or three weeks, when they are usually able to begin a period of upbuilding. By these means we seek to obtain a thorough physical restoration, realizing that if the mental process is to be corrected and readjusted we must first seek to develop a normally functioning body. Hence, patients are given work suitable to their individual needs. It is not always an easy matter to convince the drug addict of the importance of a long period of after-care, so necessary for his physical as well as mental readjustment. But the longer we are in this work the more we are impressed with the necessity. The reason for the disastrous results which occur in so many cases of narcotic addiction is that this important period of physical and mental readjustment has been entirely overlooked. In reality it is a most important part of the entire treatment. The gravest error of the past has been that these people have been released from custody before they were able to stand on their own feet. Thus lacking in confidence, they resorted to the remedy they knew would bolster them up again. This would not have happened if the physical readjustment had been complete.

We have a five-acre truck garden and a five-acre orchard in which these men are assigned to work, thus relieving the state of the expense of buying provisions of this character. In time we propose to enlarge our agricultural activities to an extent that will considerably relieve the financial burden of food and dairy products for these patients through their own labor.

ADMISSIONS TO THE INSTITUTION

We have admitted to the institution for treatment up to the present time about one hundred seventy patients, all committed to our care by the judges of the superior courts of the State of California, for an indeterminate period of from eight months to two years. Of this number, twelve have already been paroled from the institution and fifteen more are expected to leave the hospital during the month of June.

In order to gain parole the patient must reach a stage of physical balance where we feel quite sure that the use of narcotic drugs is unnecessary for his physical needs. A provision of the parole is that we must be satisfied that while at the hospital these men receive a thorough rehabilitation which will enable them to earn a living when they leave the institution. They must give evidence of being able to do this before they are eligible for parole. Another important step which is taken into consideration is that of providing work for the addict when he leaves the institution. We must have assurance of this work from a future

employer before the parole of an addict is finally passed upon. This work is obtained through the efforts of the parole officer, who also endeavors to secure the coöperation of a near relative or a close family friend to aid us in keeping the addict from relapsing after he leaves the institution.

A NEW YORK INSTITUTION

Several years ago a large hospital was organized by the city of New York for the treatment of drug addicts, and over two thousand patients were treated there during a period of two years. These patients were committed for a period of ninety days, and a large number of them were relieved of their addiction permanently. The relapses that occurred were largely due to two important factors. They were not kept there long enough for a thorough rehabilitation and there was no system of parole or follow-up work in connection with their discharge. In short, they were simply sent into the streets again, many to renew their relations with the peddler within twenty-four hours after their release. I was placed in charge of this hospital a few months after it was started, and one of the first recommendations I made was for a longer period of after-care and an efficient follow-up system. Unfortunately the short-term period of treatment had been adopted by the courts and could not be changed, and there was an insufficiency of funds to carry on the parole work and follow-up system. I know of no other place in the United States where the California constructive program is carried out with the view of reclaiming the narcotic addict as we have in California.

COÖPERATION OF PHARMACY BOARD AND OTHER AGENCIES

Much efficient work has already been done by the State Board of Pharmacy in obtaining laws that will, to a large measure, act as a deterrent to those who seek to enslave more victims of habit-forming drugs. We have in Los Angeles an organization of efficient police officers whose vigilance will always be a barrier to the activities of the distributors. I feel that the State of California may well be proud of the fact that so many citizens have given much of their time and thought to the subject of narcotics and narcotic sufferers. Through the constructive coöperation of various organizations that are interested in this problem we have every reason to believe that in the near future we will have a better understanding, not only regarding the care and treatment of the sufferer, but also how we hope to prevent the making of new victims of narcotic addiction.

PERSONAL VIEWPOINTS ON NARCOTIC CURES

I am frequently asked if I believe that the drug addict can be cured. Yes, I believe that with proper treatment and care narcotic addiction is quite curable. I know of dozens of addicts who were relieved of their addiction years ago and to my knowledge, up to the present time, these people have not returned to their addiction.

I am particularly hopeful for the future of these sufferers here in California because I know the caliber of the people engaged in helping to

reclaim them. I have found in Governor Young a man deeply concerned and anxious to assist in every way in the rehabilitation of these unfortunate people. The same may be said of his director of institutions, whose kindly coöperation has had much to do with whatever success the State Narcotic Hospital has had. Senator Sanborn Young of Los Gatos deserves the high praise of his fellow citizens for the tremendous amount of work he has done in the legislature regarding the narcotic problem. Senator Benson of the State Board of Pharmacy has done much in not only apprehending the peddler but in securing hospital care for the unfortunate victims. Here in Los Angeles we cannot overlook the president of this association, the Honorable Judge Fricke, whose name has been identified with every recent constructive movement concerning narcotic addiction in southern California. I feel also that the medical profession as a whole might well be appreciative of such men as Doctor Williams and Doctor Duffield, whose real constructive advice concerning the medical handling of these cases has been of much value. With coöperation such as I have just mentioned, the State of California will soon be in a position to show by its own results how the narcotic sufferer may be converted from a liability into an asset.

TREATMENT OF PARKINSON'S SYNDROME WITH FEVER PRODUCED BY BATHS*

REPORT OF CASE

By P. S. POUPPIRT, M. D.
San Francisco

DISCUSSION by H. G. Mehrtens, M. D., San Francisco; Frederick Leet Reichert, M. D., San Francisco; W. Edward Chamberlain, M. D., San Francisco.

THERAPY in encephalitis (Parkinson's syndrome) is still unsatisfactory. Even when every assistance from hyoscin, stramonium, atropin, nicotin, bulbocapnin and sedatives has been utilized, there is still room for further aid. After observing the good results obtained from hyperpyrexia produced by baths in neurosyphilis, it seems worth while to apply the same method to encephalitis.

The material consisted of eleven cases, all individuals showing very marked Parkinson signs and symptoms. The complaints were varied, including tremor, difficulty in walking, weakness, ocular crises, marasmus, spasticity, muscular pains, mental depression, insomnia, etc. All had had thorough previous treatment with other standard means of therapy. In addition a few patients suffering from paralysis agitans, presumably with an arteriosclerotic etiology, were unimproved by hyperpyrexia.

METHOD

The baths were given in an ordinary continuous bathtub. The mouth temperature as taken with a regular thermometer, the rectal temperature as obtained by the thermocouple, and the

* Read before the Neuropsychiatry Section of the California Medical Association at the Fifty-Eighth Annual Session, May 6-9, 1929.

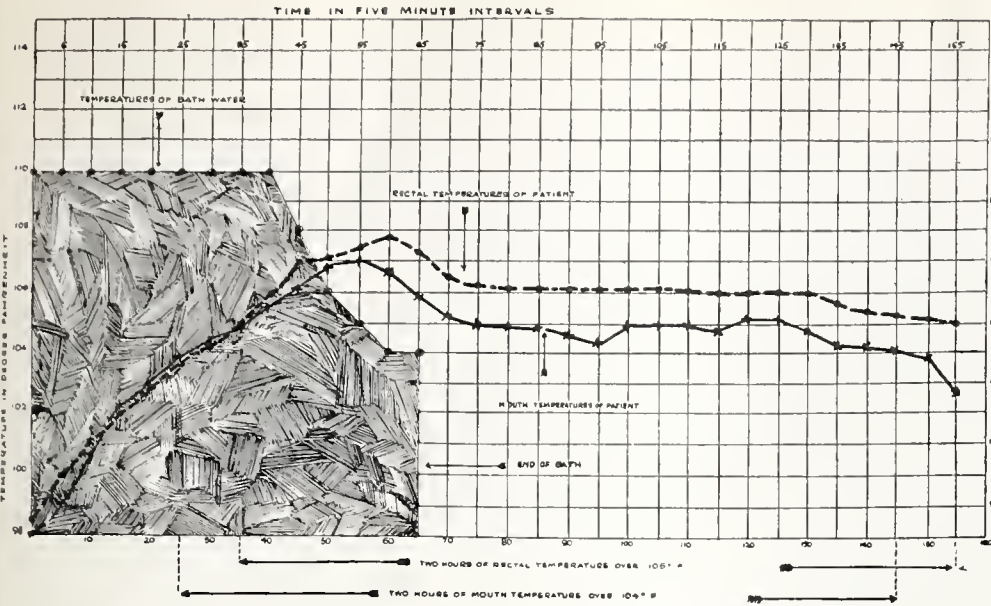


Chart A.—Showing relationship between mouth, rectal, and bath temperatures

pulse were recorded every five minutes. The temperature of the bath water was ordinarily started at 110 degrees Fahrenheit, although in special cases lower temperatures were used. The patient ordinarily entered the bath readily, but at times encouragement on the first bath was necessary. Chart A shows the rapid rise in the mouth and rectal temperatures, which were allowed to continue their upward course until a point was reached about one and a half degrees under that which had been decided upon as the desired temperature. In comparing the mouth and rectal temperatures there is ordinarily a close correlation, but at times, as shown in Chart C, especially in noncoöperative patients, the recorded mouth temperature may be much lower than the rectal temperature. If this discrepancy is not realized, additional raising of the bath water temperature may result in trouble. The patient's fever is maintained for a period of about forty-five minutes at from 104 to 105 degrees Fahrenheit, even higher at times. The pulse shows no marked variations, as shown in Chart B. The blood pressure falls, but returns to normal the next morning. The weight loss during one treatment is from three to five pounds, which is not only regained before the next day, but after a series of fourteen baths there is a marked increase in weight. The basal metabolism increases from 80 to 100 per cent.

The number of baths varies from fourteen to twice that number without interruption, depending upon the needs of the case. At times the situation seems to demand a treatment every

other day, or even every third day. No complications of importance were noted in a series of nine hundred baths given to patients with a variety of neurological conditions.

SYMPTOMATIC RESULTS

The therapeutic results of fever produced by baths may be divided into the symptomatic results, the results which accrued to individuals as a whole, and finally the aid which thermotherapy gives us in reëducation of the patient in overcoming disabilities.

1. Treatment of symptoms: It was noted early in the course of our series that certain presenting symptoms were made worse during the bath. Tremor and sputtering speech were particularly exaggerated; while ocular crises frequently occurred. These are the phenomena which were most often ultimately improved. After a course of from fourteen to twenty-four treatments the tremor was cut down at times very noticeably; at other times it was hardly affected at all. Ocular crises were broken up in some cases; made less disturbing in others, with fewer and less severe attacks; while a minority of cases were unaffected.

The speech in nearly every case was improved. Pains in the muscles involved in the tremor were always relieved. The spasticity was markedly lessened in over one-half of the series; all cases showed less depression and increase of energy. This latter symptom we were inclined to discount because of the appeal that any new spectacular treatment is liable to induce in the patient, although its persistence after discontinuing the

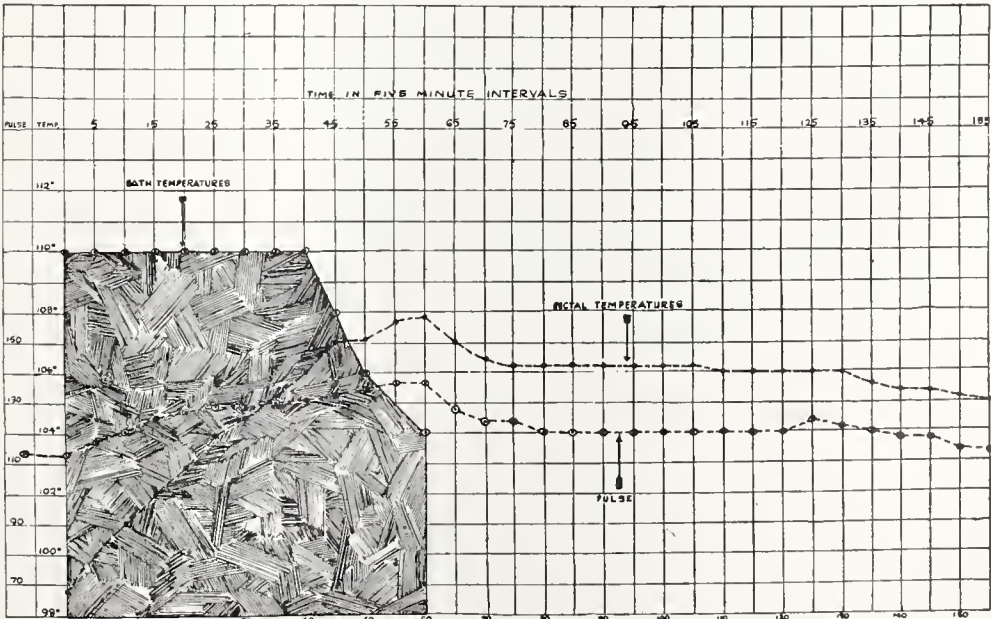


Chart B.—Showing effect of production of relatively high temperatures upon pulse

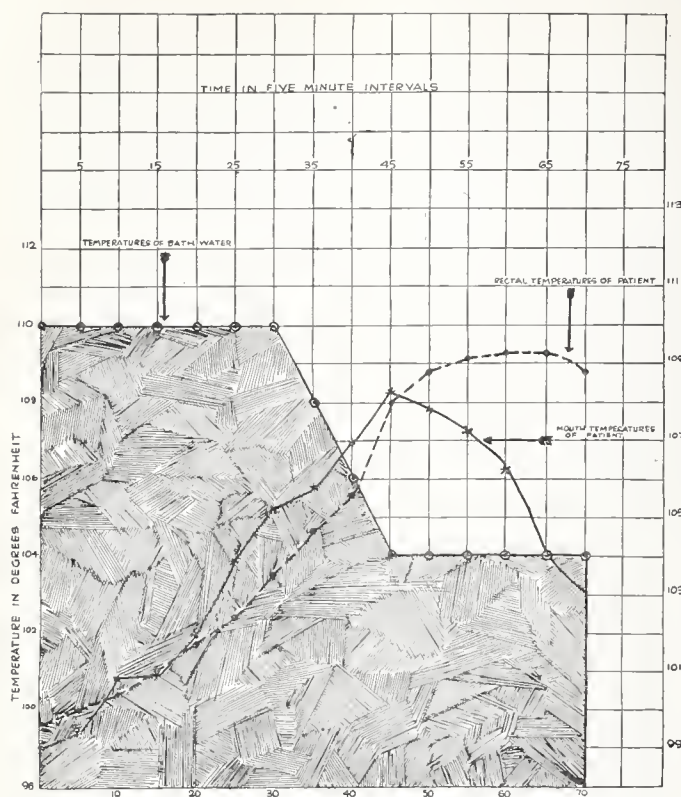


Chart C.—Showing possible discrepancy between recorded mouth and rectal temperatures

baths led us to anticipate a more permanent benefit. The gait was improved in all cases.

2. The general health of all patients treated was improved. Not only did they gain in weight in varying amounts, but there was a tendency to increase in the hemoglobin and erythrocytes. The reticulocyte count averaged 2 to 3 per cent increase. It seems logical to expect that any method of treatment which apparently had such a profound effect on the basal metabolism and chemical processes might favorably affect a condition which may be essentially a progressive chronic infection. The question arises as to the possibility of the virus of encephalitis being amenable to high temperature prolonged over a period of an hour—two hours if necessary. This we had no way of deciding, but it is a question for consideration.

3. Reëducation of the Parkinson type of encephalitis is an important part of our efforts to do away with some of the most disturbing disabilities of these patients. This is especially necessary if we hope to return the patient to work. The ability to carry out finely executed movements, such as shaving, writing, etc., to walk without attracting attention, and to speak clearly, are all important points to consider. We found that reëducation could be carried out with greatly increased impetus after a series of baths were given, whether due to lessening of the spasticity or to increasing strength, or even perhaps to changes in the sclerotic areas in the basal ganglia.

HISTORY OF A CASE

The following is a single case history illustrating many of the points referred to, chosen for that reason and because of the interesting relapse with recovery after further treatment.

CASE 180857.—White, male, American, age 48. Insurance broker. On October 17, 1928, entered hospital in wheel chair, giving history of encephalitis in 1919, with onset of sequelae first noted in 1923. The

symptom complex had gradually increased in severity until upon entry he was markedly undernourished, weighing only 114 pounds; was unable to walk; could only run, bent far forward, a few steps; had marked tremor of both arms and legs as well as tongue and jaw; spoke very indistinctly; slept poorly; complained of severe pain in extremities and had been unable to care for himself, or even sign his name for many months.

He was treated consecutively with bulbocapnin, stramonium, hyoscin, and a combination of hyoscin and sodium bromid. The best results were obtained by the last, but the patient complained of the unpleasant blurring of vision, dizziness, dryness, etc., accompanying effective dosage. The beneficial results following medication, although very worth while, were only of a few hours' duration.

November 20, 1928.—All medication was stopped and a series of twenty-nine daily baths begun. It was noted that, during a bath, there was extreme exaggeration of his tremor with accompanying severe pains in the muscles, and marked increase in the speech defect. After eight baths he had no more pains in the extremities, was sleeping well, also feeding himself. After ten baths he began to walk, and reëducation was started in addition to the hyperpyrexia therapy. He was dismissed at the close of the series, with no medication, weighing 123 pounds. It was felt that, although he was markedly improved, the results were unexpected and probably transient. However, at home he continued his progress toward rehabilitation.

January 9, 1929.—Able for the first time to sign his name, shave, and completely care for himself. On this date he reëntered the hospital and was given nine more daily hyperpyrexia treatments. He gained a pound a day, and made plans to work.

February 13, 1929.—Seen in out-patient department. Now works eight hours a day, managing his business; walks five miles; writes letters on the typewriter; the bank accepts his signature; is happy and self-supporting.

March 12, 1929.—Reëntered hospital after six weeks of overworking, weighing only 123 pounds, scarcely able to walk, with marked tremor and pains in extremities. He was despondent and suicidal. Twenty-one more hot baths were given him on alternate days. He gained twelve pounds in weight, and was dismissed from the hospital capable of returning to work.

May 3, 1929.—Seen in out-patient department; in very good condition; happy; able to care for himself; take long walks, and planning to return to work on part-time basis.

SUMMARY

1. The encephalitic patient (Parkinson type) stands hyperpyrexia produced by baths very well.

2. Presenting signs and symptoms, such as tremor, spasticity, ocular crises, pains in the muscles, and feeling of stiffness, are helped in nearly every case, and in a few cases are entirely done away with.

3. The health of the individual as a whole is improved. His weight is increased; he has a feeling of well-being, and less depression.

4. These treatments are particularly useful as an adjunct in the reëducation of patients with very severe sequelae of encephalitis. It occasionally enables them to be put back to useful employment where other measures have entirely failed.

Stanford Hospital.

DISCUSSION

H. G. MEHRTENS, M. D. (Stanford University Hospital, San Francisco).—It has been a great satisfaction to be associated with Doctor Pouppirt in the study of the effect of hyperpyrexia on diseases of the nervous system, of which this paper deals with one phase. In a series of over nine hundred baths there were no serious complications. This does not mean that these treatments are without danger, or that they can safely be delegated to unsupervised nurses or technicians. Doctor Pouppirt has demonstrated

how readily the mouth temperature in noncoöperative patients can entirely misrepresent the real situation and lead to calamitous results. At the present time it seems to me that these treatments should be given in an institution where attendants can be properly trained and supervised, and where a physician is within call.

The contraindications to these treatments might also bear discussion. Hypertension, marasmus, myocarditis, all have been represented in patients subjected to high temperatures. We feel that careful medical supervision of each individual explains the lack of unfavorable results.

FREDERICK LEET REICHERT, M. D. (Stanford University Hospital, San Francisco).—This work of Doctor Mehrtens and Doctor Pouppirt opens up a new field of therapy and makes one wonder as to its mechanism. Just as Weed and McKibben presented a new means of neurophysiological investigation with their hyper- and hypotonic intravenous solutions, so hyperpyrexia should give us means of studying the physiological effect of heat on brain tissue. Hyperpyrexia, applied to patients with large decompressions, would give information as to brain volume; and experimental studies on the cerebral circulation by dye absorption tests and microscopical inspection of the exposed cortical vessels should add much to our knowledge as to whether hyperpyrexia influences body structures directly or through the blood stream and, if through the blood stream, of its effect upon brain tissue and cerebral function.

Just recently an arteriosclerotic patient with marked symptoms of intermittent claudication, for whom various medicaments including a course of diathermy gave no relief, was subjected to these hot bath treatments with an immediate ability on his part to walk continuously twenty-eight blocks instead of the customary half block. Clinically he presented marked improvement. As to the mechanism in this case, one can only speculate at present.

W. EDWARD CHAMBERLAIN, M. D. (Stanford University Hospital, San Francisco).—The simplicity and rationality of Doctor Pouppirt's and Doctor Mehrtens' method of producing hyperpyrexia must appeal to everyone. Too often we physicians "fall for" the more spectacular and elaborate methods, especially in the realm of physiotherapy. It reminds me of the reports of using diathermy for raising the temperature of patients under anesthesia as a preventive of surgical shock. Hot water bottles and blankets are much safer and just as effective, but not so spectacular.

Doctor Pouppirt and Doctor Mehrtens have developed the technique of this hot bath treatment until it can be said to be a remarkably efficient and effective and precise method of raising the patient's body temperature. We are looking forward with great interest to the results which they may obtain in a variety of diseases and conditions.

GWATHMEY ANALGESIA*

OBSERVATIONS ON ITS USE IN CLINIC
AND PRIVATE PRACTICE

By LUDWIG A. EMGE, M. D.
AND
CHESTER L. COOLEY, M. D.
San Francisco

THE report presented here embodies the results of a comparative study on the use of the so-called Gwathmey analgesia in 200 deliveries, 100 of which were observed in the maternity service of the Stanford women's clinic, and 100 in the private service of one of us (Emge). The object of this report, which we make on the re-

* From the Department of Obstetrics and Gynecology, Stanford University School of Medicine, San Francisco.
* Read before the Anesthesiology Section of the California Medical Association at the Fifty-Eighth Annual Session, May 6-9, 1929.

quest of the section of anesthesia, is to compare the applicability, advantages and disadvantages of this method in two distinct groups of individuals in hospital practice. We omit a review of the literature, since the subject has been so admirably reviewed by Hatcher (*Journal A. M. A.*, 1927, Vol. 89).

GENERAL INDICATIONS

In going over all of our delivery records of the periods covered by this report, we found that, in clinic as well as in private practice, this method of analgesia had been used slightly less than 50 per cent. It was not used more frequently because of the exclusion of most of the multiparae and those primiparae whose labor either had advanced too far or showed an unusually rapid progress. In not using Gwathmey analgesia in this latter group we may have been over-conservative, but from our earlier experience we concluded that the best interests of the mother and the child were not served if the period of expulsion and deep analgesia or anesthesia would occur simultaneously. Since we have no way of gauging the time element in the more rapid labors, we therefore managed this group with other pain-relieving measures, particularly chloral hydrate and nitrous oxid-oxygen analgesia. We attempt to confine the use of Gwathmey analgesia to labors which we can expect to be of average length or to be prolonged as in those complicated by occiput posterior positions, premature rupture of membranes, border-line pelves, and large babies. We have used the method in toxemias, placenta praevia, breech positions, and in conjunction with hydrostatic bags and have found it just as serviceable as in uncomplicated labors.

ANALYSIS OF TWO GROUPS OBSERVED

The two groups discussed here each represent the last one hundred deliveries aided by Gwathmey analgesia. The deliveries in the clinic group have been conducted mainly by the house staff of the department of obstetrics and gynecology, while the private group was delivered by one of us (Emge). The individuals of these groups fall into two social classes, namely, the working class and the upper middle class. We will assume that the latter group as a rule represents a higher level of intelligence. During their intensive prenatal care they are mentally prepared for a comparatively painless childbirth. This mental preparation undoubtedly makes these patients more often responsive to this analgesia than the clinic patient whose lower level of intelligence and superstitions act as a barrier. Of the 200 patients we have delivered under morphin-ether analgesia, 179 were primiparae and 21 multiparae.

TABLE 1.—Showing Relief From Pain

Degree of Relief:	Excellent	Good	Fair	Poor
Clinic Service	18	51	24	7
Private Service	25	56	15	4
Hours of Duration of Analgesia:				
Clinic Service	3-7	1-5	1-3	0-1
Private Service	1½-15	1-14	2½-11	4-6
Average Duration:				
Clinic Service	3.9	3.4	2.1	0.9
Private Service	6.3	3.8	4.8	5
Accessory Nitrous Oxid Required:				
	Very little	Usual end	Anesthesia	No Anest.
Clinic Service	39	58		3
Private Service	15	75		10

The general result in the private group is distinctly better than in the clinic group although the incident of accessory anesthesia at delivery is higher in the former. We have observed that the nitrous oxid-oxygen mixture used in end anesthetics should be kept at 50 per cent or less in order to avoid too profound a temporary anesthesia, resulting in a complete lack of coöperation by the patient. In thirteen instances it was possible to deliver the fetus without accessory anesthetic. The marked difference in the frequency of complementary end anesthesia in the two groups must be explained on the ground of individual interpretation of the amount of gas actually used. The personnel attending to the anesthetics is not only different in the two hospitals in which these patients were delivered, but changes from time to time occur within the service. What constitutes "very little" and "just sufficient" gas varies with individual interpretation and cannot be accurate. If, therefore, we combine the first two groups of figures we find that they approach each other, namely, ninety-seven for the clinic and ninety for the private patients. In the "no anesthesia" group there is a marked difference in favor of the private group.

If we study the comparative duration of the analgesic period we find that throughout the four divisions the private group shows a greater length of analgesia. To explain this result satisfactorily we must assume that the patient's mental state and eagerness for relief is a deciding factor, for we have no way of explaining it on technical grounds since the method of administration is identical in both hospitals. For perhaps the same reason we find that amnesia after labor is apparently equally more frequent in the private group.

TABLE 2.—*Showing Effect on Labor*

<i>Maternal:</i>		Confusion	Vomiting		Labor		Cessation
			Severe	Mild	Rushed	Prolonged	
Clinic		8	2	24	25	7	0
Private		6	4	12	12	8	8
<i>Fetal:</i>							
		Mild	Anesthesia		Severe	Anesthesia	Stillborn
Clinic			13		6		2
Private			6		8		0
<i>Deliveries:</i>							
		Spon- taneous	Instru- mental Total	Lack of Expul.	Occip. Post.	Breech	Cesarean
Clinic		70	28	14	14	1	1
Private		61	36	25	11	3	0

Many patients experience a fair degree of amnesia which undoubtedly would become permanent were it not that they discussed their experiences with other patients or friends. The average woman prides herself in having passed through a hard labor, and takes it as a rebuke if she is not believed. We find this particularly true of the less intelligent individual. It is, therefore, not always easy to ascertain the degree of amnesia experienced. The patient must be cautiously questioned prior to any discussions on her part with other individuals. We have not attempted to give any figures on account of the uncertainty in determining the degree of amnesia.

SPECIAL SYMPTOMS

Mental Confusion.—We saw marked confusion in 7 per cent of our patients. This occurred with almost equal frequency in both groups. To obvi-

ate this we have of late administered two grains of luminal by mouth to the patients of the private group. Since then marked confusion has not been seen. We believe that confusion is also lessened by the preliminary use of chloral hydrate administered rectally early in labor. In the private group the last twelve patients received instead of morphin and magnesium sulphate about one-half hour apart, only luminal and chloral hydrate, followed in from one-half to one hour by the ether-oil instillation. The result was equally as efficient as in the orthodox Gwathmey method. This modification has the advantage of avoiding respiratory depression of the newborn should labor terminate within a few hours after the ether injection. Our observations are too few to allow us to make a definite statement as to the advisability of substituting this modification for morphin-magnesium sulphate. While we have our doubts about synergism between morphin and magnesium sulphate in man we do not propose to enter into the existing controversy. Our experience has left us with the impression that, clinically speaking, it is of little importance if morphin is given alone or in conjunction with magnesium sulphate. In some instances we have omitted one or the other, or both, and found the degree of analgesia produced by ether-oil alone quite satisfactory.

Vomiting.—Vomiting, which may occur in any labor, seems to be more frequent in Gwathmey analgesia. It usually occurs soon after the ether instillation. Apparently it has no relation to the amount of food present in the stomach, but must be considered a reflex phenomenon due to a reversed gradient in intestinal peristalsis. While we never saw fecal vomiting we have noticed a pronounced odor of ether in the vomitus. We do not attribute any particular significance to this since vomiting is rarely a very disturbing factor. In our series it happened to be more frequent in the clinic patients.

Effect in Time of Labor.—It is interesting to note that labor was decidedly hastened in thirty-seven patients and retarded in fifteen. The table of clinic patients showed hastened labor twice as often as in the private patients, while prolonged labor was about equal in both groups. It is fairly simple to ascertain hastening of labor because these patients invariably speed up cervical dilatation very soon after the giving of morphin or immediately after the ether-oil administration. We feel that this is due most likely to morphin, the action of which is just about at its height when the ether-oil is being given. At times we have seen similar sudden cervical reactions when chloral hydrate was used in conjunction with morphin without the ether-oil, while we rarely have seen such an occurrence after chloral alone. Hence we believe that morphin is the responsible factor in many instances.

While it is comparatively easy to determine hastening of labor in Gwathmey analgesia, it is difficult to connect this method of inducing analgesia with prolonging of labor. In all fairness we must say that most of our prolonged labors could be ascribed to obvious obstetrical causes.

It is different with actual cessation of labor. In our series cessation occurred in eight of the private group, and was unquestionably due to Gwathmey analgesia. In three instances this should have been avoided had the examining house physician judged the dilatation of the cervix correctly. Although very definite rules regarding the time when the administration of the drugs should be started have been made, mistakes in judging cervical dilatation will be made, particularly when the cervix has been displaced posteriorly. In these eight instances labor ceased 3, 4, 4, 5, 7, 7, 11, and 15 hours respectively. Except for the inconvenience to patient and attending staff, cessation of labor is of no particular importance in the ultimate course of labor. We have not hesitated to repeat the rectal administration of ether after labor again has well been established. A second suppression of labor we have not experienced.

Effect on Newborn.—In studying the effect of the method on the newborn, we found that 19 (13 and 6) showed mild signs of anesthesia, 14 (6 and 8) severe anesthesia which required strenuous measures of resuscitation, and two were stillborn. These fetal deaths occurred in the clinic group. Autopsy showed aspiration of meconium in one. It would not be fair to attribute these deaths to Gwathmey analgesia, since they could equally well be obstetrical accidents. In the private group, in addition to the above observations, it was noticed that twenty-one babies assumed a typical position of mild opisthotonos immediately after delivery of the body. Most of these babies had a very slight bluish tinge for a few minutes after birth. We cannot say what this phenomenon might be due to because it will be seen irrespective of the length of the analgesia. So far we have not seen this phenomenon in the chloral hydrate modification, but, since the number of these patients is small, we have refrained from forming an opinion. On the whole there is sufficient evidence that fetal anesthesia is frequent and at times serious. Ether is commonly noticeable on the breath of the newborn even if manifestations of anesthesia are absent. In our minds this is a serious drawback to Gwathmey analgesia.

Effect on Labor.—In studying the effect of the Gwathmey method on labor we are certain that low forceps operations were increased in frequency. We saw 131 spontaneous deliveries (seventy private and sixty-one clinic); sixty-four forceps extractions; four breech extractions; and one cesarean section. Leaving out the latter two divisions, we can ascribe thirty-nine (fourteen private and twenty-five clinic) forceps extractions to lack of expulsion. We do not allow the head to remain on the perineum more than one hour, even if we believe ultimate spontaneous delivery is possible. Skillfully conducted, a low forceps extraction after episiotomy is less harmful to the fetal head than a prolonged perineal stage. The incident of twenty-nine instrumental deliveries, occasioned by persistent occiput posterior positions, must be considered an obstetrical accident. The number of occiput posterior positions cited

here covers nearly five hundred deliveries and consequently is not unduly high. In the private series we observed seven spontaneous rotations in Gwathmey patients. No figures were available in the clinic series. It is our firm belief that the Gwathmey analgesia is of the greatest help in the trying and long-drawn-out labors due to this particular type of dystocia. We are also under the impression that spontaneous rotation occurs more frequently. In regard to the higher number of low forceps extractions in the private group, which is twice as high as in the clinic group, we believe it to be about the usual proportion. It has nothing to do with the method of analgesia. In a general way, the incident of nearly 20 per cent of instrumental deliveries in both groups for lack of expulsion is above the average. The increase must be ascribed to Gwathmey analgesia. In these instances the coöperative correlation of the patient is absent or uncertain although uterine contractions continue normally.

TABLE 3.—*Postpartum Observations*

	Rectal Irritation		Magn. Sulph.	Delay of
	Mild	Severe	Abscess	Lactation
Clinic	16	4	0	0
Private	11	2	1	0

In spite of a very careful preparation of the rectum before the ether-oil instillation and an early bicarbonate of soda enema, postpartum, we have seen thirty-three rectal irritations, six of which were very distressing. None of these patients had a history of colitis, which at all times should be a contraindication. We do not know how to obviate rectal irritation. Fortunately the severe types of irritation are few and last seldom more than forty-eight hours. While it is a distinct drawback to the method, it is not a sufficient objection to its use.

Magnesium sulphate abscess is very rare. The abscess forms under the fascia lata and, therefore, remains concealed. Any prolonged pain and suggestive induration in the region of injection should be suspected to be abscess formation and should be incised. The abscess will heal rapidly if opened early. Even at the risk of failing to find an abscess cavity, it is better to drain than to allow a concealed abscess to follow the fascial sheath.

To our knowledge, delay in lactation has not happened in this series.

The method has been used in conjunction with Voorhees bags, and proved quite satisfactory. In this series we saw two postpartum hemorrhages in each case, mild and not attributable to Gwathmey analgesia.

SUMMARY

In summarizing our observations we believe that, broadly speaking, the more intelligent patient makes a better subject for the use of Gwathmey analgesia although she requires instrumental help more frequently than the clinic patient. The slight increase of low forceps extraction in general is inconsequential in well-conducted hospital practice. The advantage of the analgesia in diffi-

cult labors, especially in occiput posterior positions, is excellent.

An analysis of the combined figures of the two groups shows that labor is often hastened, rarely prolonged, and seldom ceases, if certain time elements are observed.

While confusion, vomiting, and rectal irritations are objectionable, they are not sufficiently serious to disqualify the method. The only serious drawback that we can find in the method is the increased fetal anesthesia. We believe that this can ultimately be reduced by certain modifications in the selections of the preliminary drugs.

Our impression is that this method of analgesia is a distinct advance in the relief of the suffering of the laboring woman. We are aware that it must be modified as the needs require. Its applicability in our hands is about 50 per cent of all patients delivered. It is practically limited to the primiparae and those multiparae whose interval of childbearing is very long.

2000 Van Ness Avenue.

OPHTHALMIC DELUSIONS*

By AARON S. GREEN, M. D.
San Francisco

MANY people throughout the world entertain beliefs about the eyes that are pure superstitions; beliefs that date back to the time when the human race was still in its mental infancy. With the growth of human knowledge some of these have been outgrown and many have been cast aside by the majority of people, but a large number still persist throughout the world. Among such beliefs might be mentioned: that meeting a cross-eyed person will bring ill luck; that the eyes of a snake will cause birds to be hypnotized; that compressing the eyes with tea leaves is a good method of treating inflammation of the eyes. These and many similar delusions are often met with and not infrequently may be the cause of mental and physical suffering and sometimes even of blindness. Many of these delusions about the care and treatment of the eyes are not confined to the laity, but are still found among certain members of the medical profession. Special mention will be made of certain of these delusions.

VALUE OF ANTISEPTICS IN EYE THERAPY

Since the discovery of bacterial causes of disease, antiseptic measures have played a great part in the care and treatment of the eye. Thus the use of silver nitrate in the eyes of infants immediately after birth has prevented much blindness from ophthalmia neonatorum, which disease has been almost completely stamped out in the civilized countries through this treatment. However, the enthusiasm in the use of antiseptics is often carried too far, as it has become the custom of physicians to instruct the nurse or mother to treat the eyes with boric solution. This, of course, seems the more necessary when the eyes show much irritation following the use of the silver nitrate, and this conjunctival irritation is often

mistaken for purulent conjunctivitis. When this occurs, the treatment with boric solution is reinforced with a stronger antiseptic such as zinc sulphate, and instead of the eyes clearing up, the conjunctival irritation is increased, and the infant is brought to the ophthalmologist. The conjunctival irritation after the use of the silver nitrate will clear up if left alone. Wiping the outside of the lids with a moist cotton applicator, if they are stuck together in the morning, is the only procedure necessary. Boric acid solution dropped into the eyes of an infant is worse than useless, as the eyes do not need any medical preventive other than the drop of silver nitrate. If the eyes are infected, boric acid is too mild an antiseptic to do any good; and the practice of dropping the solution into the eyes with a cotton wad dipped into boric acid does not prevent infection, but more than likely may be the cause of it.

STRABISMUS

As the child grows older he is apt to develop strabismus. A fallacy which is usually encountered, with reference to the care of the eyes in this condition, is not only accepted by the laity, but is also found among medical men, the latter perhaps being largely responsible for this misconception. This fallacy is that the child will outgrow crossed eyes, and that up to the age of fourteen the most that need be done is to fit the child with glasses. It is commonly thought that operation before that age is dangerous, as the eyes might deviate in the opposite direction. That these opinions were generally held, was demonstrated when the writer and his brother in 1915 and 1916 sent out a thousand questionnaires to ophthalmologists in the United States, in an effort to learn their methods of procedure in strabismus cases and their reasons therefor. The large majority held to the belief that it was advisable to wait. This belief apparently was not based upon scientific research and logic, but was simply empirical.

In preparing a paper that was presented at the American Medical Association of that year we made a careful study of the position of the eyes under complete rest. We obtained the coöperation of a number of anesthetists who observed the position of the eyes under complete anesthesia. We also studied the position of the eyes of cadavers in the city morgue. We examined hundreds of full-face photographs of cadavers on file at the morgue, taken from one to ten hours following death. From these studies we were forced to conclude that under complete muscular relaxation during life as well as after death, the position of the eyes is not always up and out, as usually taught, but may be in any position; apparently governed by the anatomical condition of the orbits or ocular muscles. We found more eyes with a convergent strabismus than divergent. In a practice extending over a period of twenty years we fail to recall any case where a "cross-eye" was outgrown without surgical or mechanical assistance. We have met many who claimed that their eyes had been crossed in childhood and were now straight. But a careful examination of such eyes

* Read before the Ophthalmological Section of the Utah State Medical Association, June 29, 1928.

proved that they still deviated even though to their family and friends the eyes appeared normal.

If it can be established that unassisted, strabismus is not outgrown, or so rarely, as to be negligible, then it becomes our duty to correct the condition as early as possible for the reasons which follow.

The Psychic Effect Upon the Child.—Children are heartless to one another. To subject a child to the jibes of his playmates on account of his defect is very cruel. A child who is jeered and called "cock-eye" may have his entire psychic life injured. It is pathetic to hear the stories of these little unfortunates. They soon acquire an inferiority complex which may be carried with them through life, since modern psychology teaches that the character of a person is formed in early childhood. I have known young women who have refused to attend parties or go out in public because of their disfigurement.

Early Correction Necessary to Secure Stereoscopic Vision.—Furthermore, if we are to obtain a useful eye, something must be done before it is too late. Worth contended that, in order to obtain stereoscopic vision, fusion must be established before the age of six, probably before the age of four.

Fortunately it is within our power to determine before the age of four the steps that are necessary to straighten a child's eyes. We have to determine whether the deformity is due to a refractive error or to an anatomical anomaly. The fusion faculty is subservient to both and, in our opinion, is not the determining element in strabismus. We therefore start as early as the age of three to determine the cause of the deviation. If due to an error of refraction, then by producing complete cycloplegia the eye should become straight and glasses will straighten the eyes. If after complete cycloplegia there is still a deviation, even though reduced in amount, glasses will not straighten the eyes or, at best, only incompletely. The use of one-half per cent atropin three times daily for three days, in a child to the age of eight, and of one per cent solution in older children, if properly used, will produce complete cycloplegia. We do not agree that it may require the use of atropin for several weeks in some cases to cause cycloplegia. We have tested out the effect of cycloplegia on older children with the punctometer to satisfy ourselves that complete cycloplegia may be produced in three days. In children under the age of ten, atropin is even more effective. If cycloplegia is not complete, one would discover it with the retinoscope by the fluctuation in the amount of refractive error as the shadow moves across the pupil.

It will be found that less than 10 per cent of the eyes, under complete cycloplegia, become straight. In our own patients we have found that after the age of eight none could be straightened with glasses. Thus 90 per cent of all cases of strabismus should have surgical intervention. This is the method we have followed for twenty years, and our regrets have not been that we have operated too often and too early, but rather that we

did not operate earlier than we did. Our mistakes have been that we were not radical enough, rather than too radical. Our conclusions are drawn from a series of over four hundred private cases. It seems logical to us that by placing the eyes upon as near a normal plane as possible before the age of six that the child will have a much better chance to prevent the loss of sight in the deviating eye and to develop the fusion faculty and stereoscopic vision before these are permanently lost. We always advise the parents to have a child's eyes straightened before the age of four. If the operator will adopt a conservative operation, he need have no fears of the eyes deviating in the opposite direction later in life. We guard against this complication by never doing a complete tenotomy or resection in convergent strabismus. We prefer a tucking advancement of the external rectus, using buried white silk sutures to avoid slipping. In the event that the sutures do slip, the muscle cannot retract beyond its pre-operative position. In addition to this, if the deviation is over thirty degrees, we do a graduated tenotomy on the internus, but never a complete one. On a divergent strabismus, if the deviation is very great, so that the eye is not sufficiently straightened with the advancement, we sometimes perform a complete tenotomy, as there is very little danger from overeffect.

PRISMS

More or less analogous with this subject is the use of prisms in our adult patients. The fear of using prisms is also a very common delusion among refractionists. It is hard to understand this antipathy for prisms in the position of rest. If we would use prisms where indicated in our hyperopias, exophorias and esophorias, so many of our patients would not drift into the hands of those who presumably have a lesser training.

An uncorrected hyperphoria of even a half degree may cause asthenopia in some instances. The same is true of exophoria combined with hyperopia. By correcting the hyperopia the exophoria is aggravated unless a prism of one or two degrees is incorporated in the correcting lenses. The fear that the strength of prisms will have to be constantly raised is unwarranted. It is true that the static muscle error may require full correction eventually, but after this is reached no increase in the strength of prism will be necessary. In my own case I started with a one degree prism base down about fifteen years ago. This was gradually increased until now I am wearing three degree prism base down which has not been changed in the past five years. We have any number of patients to whom we have given prisms during the past twenty years who are comfortable, but who had discomfort before wearing prisms.

TRACHOMA

While trachoma is not very prevalent in this country, the few patients who present themselves with this disease could be given better treatment if it were not for the mistaken belief that trachoma is incurable. We feel that practically all early cases of trachoma are curable and that over

90 per cent of the more chronic cases can be cured. In the early cases the destructive sequelae such as pannus, corneal ulcers, scars of the cornea and lids, and atrophy and shortening of the conjunctiva, under proper treatment can be prevented. But even in the later stages the recurrence of corneal ulcers may be stopped and the corneal opacity greatly cleared up if handled properly.

As to methods of treatment. In the early stages, with a great deal of mucopurulent discharge, we thoroughly anesthetize the eye with cocaine and then apply to the everted lid, with a loose cotton applicator, 12 per cent silver nitrate, followed by copious saline. The patient is given a weak zinc solution for home use. Five days later the patient is again given a treatment with silver nitrate, but this time a 4 per cent solution is used. The patient is then requested to return in three days. By this time the profuse discharge should be sufficiently relieved so that the next and most important treatment is begun.

This is the use of carbon dioxid snow. The carbon dioxid is obtained in tanks from the firms that supply the ice-cream parlors. A ball of snow the size of a marble is collected in a chamois and this is applied to the cocaineized everted lids. The entire exposed conjunctiva is treated, taking care to evert the lid, so that the upper fornix is exposed and treated, and especially the area near the internal canthus. The lid is best turned over on a lid elevator and kept on stretch. The snow is held with forceps and applied with pressure for ten seconds, covering the entire exposed upper conjunctiva and shifting the snow as required. The entire treatment should take at least one minute, as the snow is usually shifted about six times. The lid should be kept everted for a few moments longer until the blanching has disappeared, to avoid contact of the cornea with the frozen conjunctiva which contact could produce an ulcer. A weak zinc solution is then dropped on the lid and cornea, and the elevator removed. The weak zinc solution is used at home for two days. The patient returns and then the other eye is given similar treatment. Each eye is thus treated alternately every four or five days. The results are really very striking. The trachoma is cleared up in two or three months and without scarring of the lids. So good are the results that one is apt to question the correctness of one's original diagnosis. The diagnosis of trachoma would be made unhesitatingly by those who are familiar with the condition.

In the later stages, where scarring of the lid and also perhaps the cornea has already occurred, the above treatment is not sufficient. But here again much may be done by radical measures. Temporizing is useless. While an atrophied conjunctiva cannot be restored, recurrence of ulcers and discharge may be prevented and the corneal opacities somewhat cleared up. The method to follow here is the one introduced by Heisrath—the extirpation of the tarsi. During the course of the operation, one will frequently find pus oozing out from the depths of the incision, proving that

such measures as rolling or the use of the copper stick are futile. Before extirpating the tarsi, one should determine whether the lacrimal canals are patent, as frequently the infections extend down into the lacrimal passages. If strictures or other evidences of infection are found, these will have to be treated accordingly before a cure of the trachoma can be expected. Following the tarsal extirpation, and while the patient is still on the table, it is our practice to apply the copper stick to the conjunctiva and wash out the excess with a weak bichlorid solution. Some soothing ointment such as a combination of novoforn and holocain, one per cent each, is put into the conjunctival sac to relieve the irritation after the anesthesia wears off. The after-results are very gratifying to the patient not only because of his improved sight and freedom from irritation, but also because of the improved appearance due to the correction of his ptosis.

GLAUCOMA

One of the most pernicious delusions met with is the rather widespread belief that glaucoma is hopeless. While it is true that a certain percentage of eyes afflicted with glaucoma will go blind in spite of all treatment, at least 50 per cent can be saved from blindness by early attention, either medical or surgical, as indicated. To throw up one's hands and say it is hopeless is little short of reprehensible. Elliot considers that at least 75 per cent can be saved from blindness. The crux of the whole question is unremitting supervision. All sources of focal infection must be eliminated. A patient should be encouraged to adopt an outdoor life and not to shield the eyes with a shade or colored glasses. A careful monthly record is kept of the vision, fields, and tension. If in spite of miotics and general hygienic care the tension remains high while either the vision fails or the fields continue to contract, an operation is insisted upon. In acute cases only, is a broad iridectomy performed. In the chronic cases we have discarded all operations in favor of trephining. In my recent trip to India I found that the Elliot operation had practically displaced all others. In fact La Grange himself has so modified his operation that it is now virtually an Elliot.

The danger from an infection following a trephining operation is largely imaginary. Personally we have been doing this operation since 1911 and have never had an infection. In discussing this with Elliot, he said that of the thousands of cases he has had he has seen infection only once or twice. He attributes infection to poor surgical technique, and we are inclined to agree with him.

There is no more perfect surgical technique anywhere than that employed by Elliot, and his methods are in glaring contradistinction to the lack of asepsis observed in various parts of the world.

CATARACT

That a patient must wait until his cataract becomes ripe before it is operable is one of the most deplorable delusions in medicine. This one delu-

sion is the cause of a great deal of unhappiness. It is difficult to ascertain how this belief originated. We frequently meet patients with vision reduced to 50 per cent or less who have been waiting from ten to thirty years for their cataracts to mature before being operated upon. This, too, at a time in life when every year makes the remaining span of life shorter and when the patient needs his eyes for the pursuit of normal activities of business or household duties, as the case may be. When the vision in the best eye has fallen to 50 per cent or less, one's ordinary activities become increasingly hampered and the cost, from an economic standpoint, is very great.

When a patient first presents incipient cataract it is probably justifiable to put such a patient on dionin and iodids or any other treatment that may seem indicated, providing the vision has not fallen below 50 per cent in the better eye. The value of drugs or any nonsurgical procedure is questionable. We have thoroughly tried out radium and lens extract and given them up, and in the early cases use only dionin and iodids. But when vision has fallen below 50 per cent and the patient cannot pursue his ordinary business or social activities we operate immediately. Naturally we prefer to perform an intracapsular operation on all immature cataracts. But if the intracapsular operation is contraindicated we do not hesitate to perform a capsulotomy, with the two following exceptions: one, in complicated cataracts in which there existed a previous uveitis and, two, in diabetic cataracts. In these we prefer an intracapsular extraction even at the risk of losing vitreous. The subsequent iritis is much less frequent in an intracapsular operation than one done by the capsulotomy method.

It is a great mistake to postpone the extraction of an unripe uncomplicated senile cataract even if one is only able to perform the capsulotomy method. In fact there are usually less complications following the extraction of such a lens than there is following a morgagnian or intumescent cataract. With attention to a few details no bad results need be feared. First, we consider it poor surgery to do a simple extraction even if followed by a Hess iridectomy, except in cases of traumatic cataracts in minors when the nucleus is very small. Secondly, we make a full half corneal section. This we have been doing since 1914 and have had no cause to regret it. The two former procedures have similar effect on the eyes in that they cause too much trauma and leave too much lens matter behind. If the section is too small the sharp edges of the incised cornea and sclera brush off a great deal of cortex which escapes detection and remains in the eye to cause iritis and secondary cataract. Voerhoff has shown that about 10 per cent of all patients have a positive lens reaction. In the case of the simple extraction the sphincter, even if dilated, also brushes off lens cortex, besides causing severe trauma to the iris. The next consideration is the capsulotomy. Here again less trouble will be encountered if a capsule

forceps be used rather than a cystotome. It is only by removing a large portion of the anterior capsule that the extrusion of the lens is facilitated as well as giving access to the aqueous to expedite the absorption of the remaining cortex. In our capsulotomy cases we push atropin and salicylates internally to avoid iritis.

1801 Bush Street.

THE LURE OF MEDICAL HISTORY

BERNARDINO RAMAZZINI

By ROBERT T. LEGGE, M. D.

Berkeley

THAT old Italian mediaeval university at Padua, famous for its teachers and students—Versalius, Harvey, and many others—called Bernardino Ramazzini as professor of physic in 1700, the year he published his book, "*De Morbis Artificum Diatriba*."

He was, as Graham Crookshank stated, a great scholar, master teacher, and acute observer like Sydenham; possessed the wit to see the insufficiency of Galenic generalization; the curiosity and imagination of the true scientist; and yet, failing to grasp the logic of Galileo, Bacon or Harvey, fell back on tags of scholasticism and the follies of the Hippocratic school. Notwithstanding his philosophic trend of thought, this original investigator is considered the father of industrial hygiene.

Ramazzini was born at Capri, near Modena, on November 5, 1633. Going to Parma for his classic course in literature, he later received his degree of M. D. in 1659. After his graduation he went to Rome, then to the Duchy of Castro, where he was married, and later, in 1671, moved to Modena, where his genius was discredited by the malice of professional colleagues. He became professor of physic at University of Modena, which position he held for eighteen years, when he was called to Padua, where he remained until his death in 1714.

The first English translation from the Latin of his work, "*Diseases of Tradesmen*," appeared in London in 1705. The front page reads thus: "Showing the various influences of particular trades upon the state of health; with the best methods to avoid or correct it, and useful hints proper to be minded in regulating the cure of diseases incident to tradesmen."

Ramazzini "thought the various and numerous diseases produced in artificers by exercise of their respective trades were derived principally from two causes: First the noxious quality of the matter on which they work, and by breathing out noxious steams and subtle particles which are offensive to human nature, gives rise to particular diseases; and in the next place certain violent and disorderly motions and improper postures of the body, by which the natural structures of the vital

machine are so undermined as gradually to make way for certain distempers."

His observations of writer's cramp, his differentiation of diseases of camps, his insistence, in season and out, on fresh air, cold water, simple living and wholesome domiciles were far ahead of his age. While his pathology, pharmacology, and therapeutics have been superseded by modern science, the accuracy of his observations were epoch-making.

There is a fine humanity about the passages, free from any taint of the ludicrous, on the diseases of some fifty tradesmen in his book, "such as live by particular exercises and callings," and include the metal diggers, gilders, painters, corpse bearers, fullers, midwives, and many other artificers.

In one of his forty-three chapters, that on the diseases of the metal diggers and of the diseases of gilders, he reviews the work of several observers of the great past: such as Hippocrates, Pliny, Agricola, Fallopius, Kircherus. His careful observations in regard to the evils of these two trades, such as "tremblings, pallor, griping of the guts, vertigo, palsy, and the falling out of the teeth," all classic symptoms of mercurialism, were believed by him to be due to this metal's "spirits."

It is interesting to note the preventive measures advocated to "avoid the sucking in of smook in their mouths by turning their backs to the wind when gilders fired amalgam" (mercury fumes).

Ramazzini on one occasion treated a young gilder for two months who was confined to his death bed. He pointed out the cachexia, the swollen eyes, difficult breathing, and the stupid mind. The patient had "stinking ulcers in the mouth which voided incessantly a very great quantity of ugly, nasty matter, without a feverish symptom." An excellent description of mercurial salivation!

His method of deduction is illustrated by the following quotation: He became concerned to know "why mercury which when given internally was so effective for worms in children, should when subjected to fire give off such pernicious exhalations as to knock men down when received by the mouth and nostril." The great danger from mercury fumes on account of the finer disintegration of the poisonous metal is today being combated by modern hygienic measures.

He was also aware that the grinding of lead, the making and the firing of glaze in pottery works, produced among the workers various symptoms: "The use of their limbs taken away from 'em, discolored complexions, their vision grown hard and having melancholic fits," all symptoms of plumbism.

Another of his greater observations was in regard to the disease of the stone cutters. His attention was attracted by the dust these workers inhaled, and he noted they were "usually troubled by cough and many of 'em turned asthmatic and consumptive." In stone cutters who had died asthmatic he found at postmortem that in run-



ning the knife through the pulmonary structures he thought he was cutting some sandy body. Our present-day knowledge of silicosis has added but little more to the astute observations of this early worker in occupational diseases.

Ramazzini was a good epidemiologist, and described the outbreak of lathyrism at Modena in 1690, the malarial epidemics of the region, and the Paduan cattle plague of 1712. He was a meteorologist of some note. Among his collected works are the "Opera Omnia Medica et Physiologica and Physica." Italy has done eponymic honor to his memory by the medical journal which bears his name published on the two hundredth anniversary of his death in 1914. A celebration patronized by the king and by scientific men from Europe and abroad fittingly took place at Milan at the famous Clinica del Lavoro, an institution entirely devoted to the study and care of occupational diseases, in memory of Bernardino Ramazzini. The founder of this clinic, Professor Devota, had a medal struck off to commemorate this event. One cannot but admire the man who, breaking through the conventions of centuries, thought it no indignity to learn of scavengers and pit diggers.

University of California Infirmary.

CLINICAL NOTES AND CASE REPORTS

PNEUMONIA RECURRING TEN TIMES IN A BOY OF TWELVE YEARS*

REPORT OF A CASE

By HENRY HERBERT, M. D.
Los Angeles

S. S., male, now aged fourteen years, had his first attack of lobar pneumonia in Los Angeles at the age of two years. Thereafter he suffered one attack every year, and even had two attacks during one year in Arizona. All in all he had seven attacks in Los Angeles and three in Arizona. I observed all of the Los Angeles attacks.

He is the oldest of four children. The other three are healthy, as are the parents. The patient has had bronchial asthma since infancy; I have observed it since the first attack of pneumonia.

The attacks run a rather mild course; there are chills, continuous fever, cough, rusty sputum, and bronchial breathing in either of the lower lobes. The disease ends usually by lysis, with complete recovery in two or three weeks, leaving no sequelae. All of the attacks occur in winter, and during the interim the boy is in very good condition. He is of normal build and strength.

Laboratory tests during the last attack in 1926 revealed in the blood a leukocyte count of 21,000, with 83 per cent polymorphonuclears, and in the sputum the usual array of bacilli characteristic of lobar pneumonia. About three weeks after the onset a roentgenogram revealed considerably more than the usual thickening throughout both hilar and perihilar regions, while the periphery and apices of both lungs were clear—the picture produced by repeated acute pulmonary infection.

According to Norris and Landis (textbook), "No other disease is so prone to recur in the same individual and not a few instances are on record of individuals who had ten or more attacks. In the often quoted case of Benjamin Rush no less than twenty-eight attacks occurred."

Chomel (cited from Lord's textbook) observed as many as ten attacks in the same patient. It may be safely stated that, among every one hundred pneumonia cases, almost regularly fifty represent first attacks, thirty-two second, fifteen third, and the remaining three represent fourth and even more frequently repeated attacks.

In the summer of 1927 prophylactic treatment with pneumococcic vaccine was given and for the first time he had no pneumonic attack in that year. The same prophylactic treatment was given in September 1928.

There are two theories advanced regarding the occurrence of such repetition: one, that there is a nidus or a "permanent" focus of infection, which flares up in case of a cold or bronchitis; the case above does not correspond to this theory, because the pneumonia did not appear always in the same lobe or on the same side.

The second theory pertains to lack of immunity or lack of resistance against this specific kind of bacteria; and the subsequent immunization on the pneumococci vaccine seems to favor the latter conception of this rare phenomenon.

In regard to prognosis, it is a fact that the mortality in children with pneumonia is low.

1052 West Sixth Street.

* Read before the Los Angeles County Medical Society, October 4, 1928.

* From the Los Angeles General Hospital.

CALCIUM METABOLISM IN MARBLE BONE (ALBERS-SCHÖNBERG DISEASE)

REPORT OF A CASE

By RANDOLPH G. FLOOD, M. D.
San Francisco

IT is the purpose of this paper to report the calcium metabolism findings in a case of Albers-Schönberg disease rather than a detailed clinical report, as this will be done by other authors in a future communication.

Miss Janet T., age 11 years, was referred to me November 7, 1928, by Dr. Leo Eloesser, with the request that I do a calcium balance on her. The family history was essentially negative. Her past history included measles, mumps, and pertussis. She gave a history of repeated bone fractures, three fractures of the left femur starting at the age of eight years, with slow periods of healing between. In December of 1927 she fractured the right femur, which was put in a cast for two months. She was again allowed up, and fractured the right femur in the same place in March of 1928. Two months later the x-ray showed an imperfect union. Doctor Eloesser was called in and the leg reset, and the diagnosis of marble bone was made, which was confirmed by the x-ray plates. At this time it was observed that she had a visual defect which, on examination, proved, due to a bilateral primary optic atrophy, most advanced in the right eye. This completed the picture of Albers-Schönberg syndrome.

She was admitted to St. Mary's Hospital on November 8, 1928. A complete physical examination was done which showed a markedly undersized girl weighing 21.6 kilos. The only physical abnormalities noted, except for the fractured right femur, was a head with rather pronounced frontal and parietal bosses, moderate pallor and bilateral optic atrophy most marked in the right eye.

Routine laboratory tests were negative except for a moderate anemia: 75 per cent hemoglobin; red blood corpuscles, 4,200,000; and many large calcium oxalate crystals in the urine.

On admission she was placed in a modified metabolism bed and started on a selected diet, the CaO contents of which was determined by wet-ashing an aliquot portion of the entire mixed diet. She was kept on this diet for a period of three days to put her in a calcium equilibrium with her prescribed intake. On the third day a blood calcium determination was made, and on the morning of the fourth day the metabolism period was started. The stool was marked by giving 0.5 gram carmin by mouth. All stools were collected after the carmin appeared for a period of three days.

The urine was marked by the injection of one cubic centimeter phenolphthalein, and all urine collected after the appearance of the phthalein.

All food was carefully weighed during the next three days and CaO determination made on aliquot parts from which the total CaO intake was estimated.

All stools and urine were collected for the next seventy-two hours and at the end of this time were again marked by the administration of carmin and phthalein which, when they appeared, ended the experiment.

All CaO determinations were made by the McCrudden method, checking with volumetric and with gravimetric determination when possible.

Throughout the experiment, daily blood CaO determinations were made and all results charted under headings, November 29, 30; December 1, 2, and 3.

On examining the chart the first thing that draws attention is the persistent hypercalcemia present, which is of a high degree, ranging from 15.8 to 16.6 milligrams of CaO, whereas the normal range is from 8.8 to 10 milligrams per 100 cubic centimeters of blood.

DATE	Nov. 29.	Nov. 30.	Dec. 1.	Dec. 2.	Dec. 3.	Jan. 8.	Jan. 11.	Jan. 13.	Jan. 16.	Jan. 17.	Jan. 18.	Jan. 19.
TOTAL CaO INTAKE		5.1665 gm.								4.8862		
TOTAL URINE OUTPUT		2440.	cc.		1210	975	1410	1160	3710.			
CaO in 200 c.c. URINE		0.0053			0.031	0.041	0.024	0.004		0.037		
CaO in TOTAL URINE		0.0649			0.0310	0.0413	0.0198	0.0256		0.0684		
WT. OF STOOL		35.3								41.27		
CaO in 5 gms. Stool		0.4806								0.5969		
CaO in TOTAL STOOL		3.3918								4.9276		
TOTAL CaO-OUTPUT-3 DAYS		3.4567								4.9960		
TOTAL CaO-RETENTION		+ 1.7098								- 0.1098		
CaO-RETENTION-PER-KILO-3 DAYS		+ 0.0803								1		
CaO-RETENTION-PER-KILO-PER-DAY		+ 0.0288								1		
BLOOD CaO Mgs.	16.4	16.4	15.7	16.6	15.8	14.6	14.6	15.0	15.2	15.2	15.0	15.3
24 Hr. URINE-CaO-OUTPUT Mgs.		0.0218			0.0310	0.0413	0.0198	0.0256		0.0228		
BODY WT. KILOS.		21.6								24.2		

The second interesting point is that even though the child has a high blood calcium her calcium retention is within normal limits: 28.8 milligrams per kilogram body weight per day. The third and most striking observation is that, with this marked hypercalcemia, the CaO output in the urine was markedly under the normal, being only 0.0218 milligrams per day. Our observations, as well as those of L. A. Hoag et al. (*American Journal Diseases of Children*, 33, 910-925, June 1927), are that the human compensates for increased blood calcium produced by parathyroid injections by excreting the CaO in the urine, this being contrary to the dog, who compensates through increased fecal output.

This last observation seemed to indicate that this child's renal threshold for calcium was evidently raised. We decided to bring her into the hospital again, raise the blood calcium by injections of parathyroid, and find the height to which the blood CaO would have to be elevated to overstep this threshold.

With this in view we brought her in on January 8, 1929, and made a preliminary blood CaO determination. To our surprise we found a hypercalcemia of only 14.6 milligrams per 100 cubic centimeters instead of 15.8, our last determination. This finding was carefully checked and found correct. This observation of fluctuating blood calcium in marble bone has previously been described as the "calcium tide" by M. B. Schmidt (*Kalkmelastase und Kallsgicht, Deutsche med. W'chenschr.*, 1913, No. 2). Evidently at this time we found her on the low ebb of her tide.

We then gave her 10 units of Collip's parathyroid intramuscularly, with one cubic centimeter phthalein to mark the urine. All urine was collected for the next twenty-four hours, and again marked with phthalein and the CaO contents estimated in the twenty-four-hour output. Twelve hours after the injection, when the maximum effect of the parathyroid was supposed to be reached, a blood CaO determination was made, as we wished to see how high the blood calcium would have to rise before an appreciable increase in CaO appeared in the urine.

Following the 10 units there was no increase in blood calcium or the calcium output in the urine.

We repeated the experiment three days later, using 15 units of parathyroid, also without results. Again three days later 20 units were given; this raised the blood calcium to 15 milligrams, but caused no increase in the urinary calcium.

Three days later we gave 25 units with a definite increase of blood calcium, but still no increase in urine calcium. At this point the child began to vomit and have epigastric distress, and we were afraid to increase the dose of parathyroid.

Evidently the kidneys are impervious to a sudden increase of 5 per cent of blood calcium.

Another interesting observation is the fact that the child became upset and reacted when the blood calcium was suddenly increased 5 per cent, but was still under one milligram per 100 cubic centimeters of the maximum existing at the height of her tide during the metabolism period.

The explanation is that she can adjust herself to gradual changes in blood calcium within wide ranges, provided the transition is not too rapid.

Having found that we could not increase the CaO output in the urine by suddenly increasing the blood calcium, we decided to again run a calcium balance while she was held at this high artificial level, with 25 units of parathyroid given at thirty-six-hour intervals.

We repeated the same technique as in our original metabolism period and charted the findings under

January 17, 18, and 19.

Examination of these figures show that we produced a slight negative balance, the child losing 0.1098 grams CaO daily.

However, we feel that this is only a temporary small negative balance, as the child will readjust herself to this blood calcium level with a positive CaO retention within a short time, as she did when she was at the height of her tide in the first experiment with a blood calcium of 16.6 milligrams, which is considerably higher than her present hypercalcemia of 15.3.

CONCLUSIONS

Evidently, then, this child has a kidney whose high threshold is fixed and, to all intents, impervious to increased blood calcium.

The child is able to adapt herself to wide fluctuations in blood calcium, provided the transition is gradual, but reacts to sudden change, much as a normal person.

There is little hope in giving this child a negative calcium balance by the administration of Collip's parathyroid, as she has the ability of gradually adjusting herself to marked hypercalcemia with a definite CaO retention.

490 Post Street.

CARCINOMA OF BREAST WITH DIFFUSE CARCINOMA OF STOMACH

REPORT OF A CASE

By HENRY S. PENN, M. D.

Boston, Mass.

THE case here reported is one of more than unusual interest from the standpoint of the pathology involved and the age of the patient.

Mrs. O. O., age 26, was referred to me in November 1926 with the following history:

Chief Complaint.—Pain in the region of the right breast.

Family History.—Father, mother, one brother and one sister living and well.

Present Illness.—Patient was well until about six months ago, when she first noticed a small lump in the right breast. The growth has since increased in size and the patient has lately suffered sharp pains over the right pectoral region and axilla. She has lost about ten pounds within the last three months. Her appetite has been fairly good, but she seems to be losing strength.

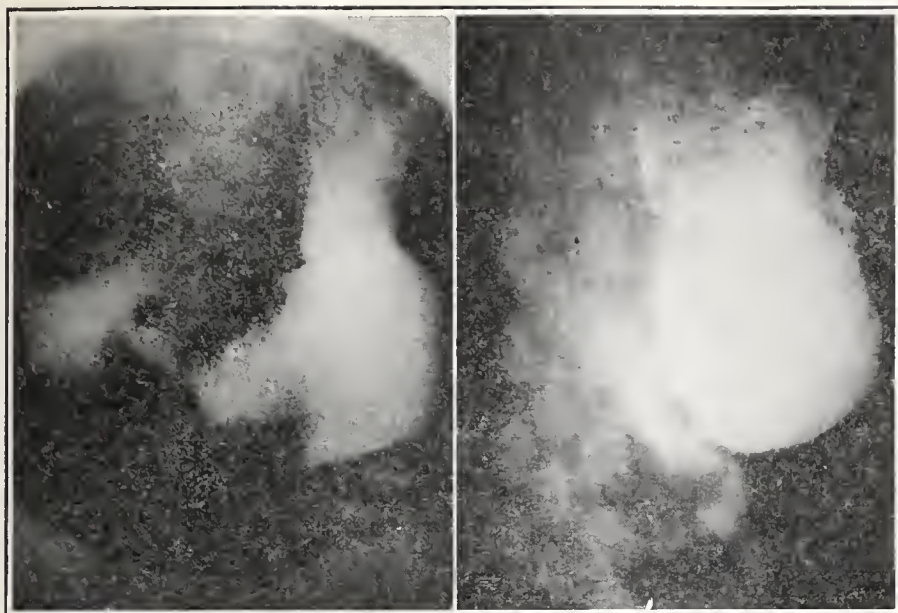


Fig. 1.—Preoperative x-ray of the stomach.

Fig. 2.—Postoperative x-ray of the stomach after resection. (This x-ray was taken after ingestion of the meal. This explains the flocculency and uneven distribution of the barium in the upper portion of the stomach.)

Physical Examination.—Patient is a well-developed, but poorly nourished young woman who appears to have lost considerable weight. The skin is sallow and suggests cachexia. The general physical examination is otherwise negative.

Local Examination.—In the center of the right breast an indurated mass the size of a golf ball can be felt. The newgrowth is slightly movable; its borders are diffuse and adherent to the deeper tissues, but not to the skin. Several glands, varying in size from a bean to a cherry, were felt in the axilla. Biopsy was done, and a small piece removed from the breast. The following is the report by Dr. Timothy Leary, professor of pathology at Tufts Medical College:

"Received nodule from breast in formalin solution. Microscopic examination: Nodule is made up of large spaces lined by multiple rows of epithelial cells surrounding a more or less central lumen. In some, lumen is filled with proliferating cells. Mitotic figures are found with little difficulty. The epithelial proliferation is not limited by basement membrane. The supporting connective tissue stroma is cellular, abundant, and shows a scattered lymphocyte infiltration. Diagnosis: Duct carcinoma of breast."

Operation was performed on November 9, 1926. Through a modified Rodman incision, the breast and pectoral muscles were removed en masse. The operation began with an extensive dissection of the axilla, working downward. Two enlarged glands were found in the infraclavicular region and removed. Skin approximated with slight tension. Patient made an uneventful recovery.

On March 1928, patient presented herself again, complaining of vomiting after meals and inability to retain even fluids. Physical examination showed patient greatly emaciated. The scar of the last operation is clear, right arm shows no swelling, is freely movable, and no masses are felt in the axilla. Abdomen shows a mass the size of a large grapefruit in the region of the epigastrium. The growth is freely movable, somewhat painful to touch, indurated and sharply outlined. X-ray examination of the stomach shows an extensive carcinoma of the pyloric end, involving a part of the anterior wall and the greater portion of the posterior wall. X-ray of the chest shows no evidence of metastasis.

Operation.—Abdomen opened under ether anesthesia. The pyloric end and most of the posterior wall of the stomach were involved by the newgrowth. The neoplasm was confined to the stomach itself. No ad-

hesions to any of the adjacent viscera were present. The liver was normal in size, surface was smooth and, as far as could be judged, was free from metastasis. Several enlarged glands were felt in the greater omentum and around the pylorus. Resection of the stomach including almost the entire posterior wall, following the Polya technique, was done. Patient left the operating table in very good condition (pulse about 76). Recovery was uneventful. Pathological report of specimen of the stomach by Doctor Leary is as follows:

"Received 10.5 centimeters of pyloric end of stomach. Beginning at pylorus and involving the whole of posterior wall is a diffuse, firm neoplasm which measures up to 2.5 centimeters in thickness; the overlying mucosa is deep red, apparently intact. Specimen preserved in gross except for thin slices from edge for microscopic examination. This shows a neoplasm made up of large alveolar masses of epithelial cells with little tendency to gland formation. Mitotic figures are readily found. Diagnosis: Diffuse carcinoma of stomach."

COMMENT

In view of the fact that the x-ray showed no existence of metastatic involvement of the chest, it is reasonable to assume that the malignancy of the stomach was primary in character.

485 Commonwealth Avenue.

A CLOSED METHOD FOR THE TRANSFUSION OF CITRATED BLOOD

By A. LINCOLN BROWN, M. D.
San Francisco

IT is our purpose to present here a method for the transfusion of citrated blood, by means of which the blood is always in a closed system and is never exposed to contamination from external sources. No brief is presented in favor of the citrate method as against direct blood transfusion, as it is our belief that more or less definite indications exist which should determine the choice of the method to be used. However, when the citrate method is employed, the technique described here will be found simple, uniformly applicable, and a refinement on the common methods.

The usual procedures for the transfusion of citrate blood involve one or more of the following exposures of the blood to the open air:

1. Blood is collected into an open container where it is mixed with the citrate solution by shaking or stirring.

2. The citrated blood is filtered by pouring through an open filter.

3. Occasionally the filtered blood is again transferred to another open vessel before being injected into the recipient.

In order to avoid the dangers incident to exposure the following apparatus and technique were devised.

APPARATUS AND TECHNIQUE

A thousand cubic centimeter Erlenmeyer flask graduated with 100 cubic centimeter marks is fitted with a rubber stopper through which pass two pieces of glass tubing. Between the neck of the flask, and completely surrounding that portion of the rubber stopper within the flask, is placed a single layer of fine-meshed gauze. The stopper and gauze are first moistened in sterile citrate solution and then securely fastened into the flask by means of tape tied over the top of the stopper and around the neck of the flask. Thus when the flask is inverted, even when filled with blood, the stopper remains in place. The longer or intake tube perforates the gauze and extends to within about 4 centimeters of the bottom of the flask. The shorter, or outlet tube, is flush with the inner surface of the rubber stopper and is directly covered by the layer of gauze. A piece of rubber tubing, about one foot in length, connects the intake tube to the needle which is to be inserted into the donor's arm. The junction of this tubing and the needle is secured through a right-angled metal adapter 2 centimeters in length. Care is taken to see that all metal and glass ends are absolutely smooth. Lindemann needles have been found most advantageous for both donor and recipient. A rubber suction bulb is attached to the outlet tube. The needle is now placed in citrate solution and 15 to 20 cubic centimeters of the solution are drawn through the apparatus. The rubber intake tubing is then removed and is replaced by the bulb which now acts so as to transmit pressure into the system. Similar rubber tubing, adapter, and needle are now connected to the outlet tube, the flask inverted and the citrate solution forced through the outlet system. Thus the entire inside of all portions of the apparatus have been moistened with citrate solution (Fig. 1).

The apparatus is once again set up for drawing fluid into the flask. Fifty cubic centimeters (or any desirable amount) of a 2½ per cent solution of sodium citrate are then drawn into the flask. The operator inserts the needle into the donor's vein in the usual manner and connects it to the system by means of the adaptor. He continues to hold the needle and the adaptor firmly in position. An assistant exerts light pressure on

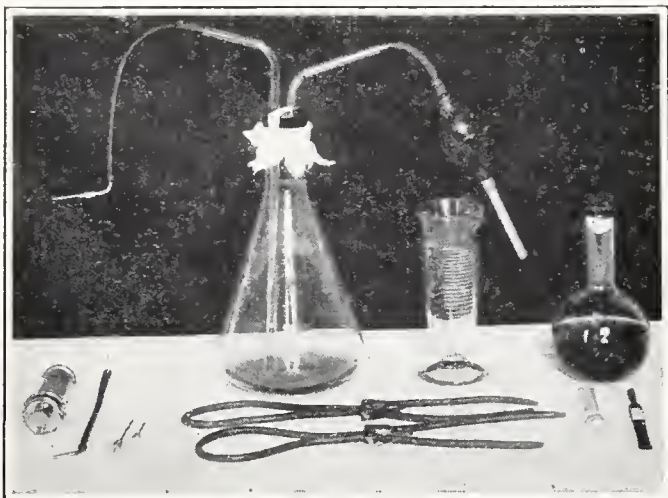


Fig. 1.—Apparatus required for the method described in the text



Fig. 2.—Semidiagrammatic representation of introduction of citrated blood into the recipient's vein

the suction bulb and gently shakes the flask as the blood flows in. (The flask should preferably be held below the level of the donor's arm.) When a sufficient quantity of blood has been collected the needle is removed from the donor's arm and the apparatus is set up once again as a pressure apparatus to deliver blood through the outlet tube. (See Fig. 2.) A needle is now inserted into the recipient's vein and connected by an adaptor to the outlet tubing. The assistant inverts the flask and by gentle pressure on the bulb forces the blood into the recipient's vein at any desired rate. Usually an average of one minute is allowed for the entrance of each 100 cubic centimeters of blood transfused.

All portions of the apparatus, including the bulb, are sterilized by boiling or steam pressure.

ADVANTAGES OF THE METHOD

Since the blood is in a closed container, it is readily transported from donor to recipient whether they are in the same or distant rooms. When the blood is immediately transferred to the recipient, it has not been found necessary to use any artificial means to keep the blood warm. On the other hand, if a period of time is to elapse between the collection of the blood and its introduction into the recipient, the blood may be kept warm by immersing the flask in a water bath, or by surrounding it with a hot towel.

Because of the suction and pressure feature of the apparatus, the automatic filtering mechanism, and the fact that the blood is not transferred from one vessel to another, makes a more efficient and rapid method of citrate blood transfusion than the usual ones.

SUMMARY AND CONCLUSIONS

1. A closed method of citrated blood transfusion has been presented.
2. In our hands the method has proved efficient, safe, and rapid.
3. The method allows for the collection, transportation, and introduction of the citrated blood from the donor to the recipient.
4. Being a closed method, the usual dangers of contamination are minimized.

490 Post Street.

BEDSIDE MEDICINE FOR BEDSIDE DOCTORS

An open forum for brief discussions of the workaday problems of the bedside doctor. Suggestions for subjects for discussion invited.

INJECTION TREATMENT OF VARICOSE VEINS—SOME DETAILS IN TECHNIQUE

K. E. KRETZSCHMAR AND JOHN B. CLARK, LOS ANGELES.—Ordinarily the patient is placed in a sitting position, with the legs supported on a small stool which is of the same height as the patient's chair. With the leg in the horizontal position, we select several points along the vein, about two or three inches apart, and, cleansing the areas with a small alcohol sponge, the needle is then introduced into the vein. Before injecting, it is important to draw blood into the syringe so that one is absolutely certain that the needle is within the lumen of the vein. This precaution will prevent sloughing. Following the injection, the alcohol sponge is again placed over the puncture site and held with some pressure for several minutes until there is no further bleeding. If the bleeding is persistent, collodion or a small gauze dressing is applied at the puncture site.

In some cases it may be better to have the patient stand in order to make the veins more prominent, and the injection is then made with the leg in a vertical position. In those larger veins which seem resistant to the usual methods, we employ a tourniquet above and below the puncture site and allow the tourniquet to remain in place from fifteen to twenty minutes following the injection. Some operators strip the vein before injecting in order to concentrate the solution within the vein, but we believe that this procedure should only be used in cases which resist the usual treatment.

The choice of injection fluids depends upon the nature of the vein to be injected. For most cases we have found that sodium salicylate from 20 to 40 per cent gives the best results. We also employ sodium chlorid from 15 to 20 per cent, especially for the larger veins, but we strongly advise against its use in the more superficial varicosities, as this solution seems to have considerable penetrating power. We find that bichlorid of mercury from .3 to .5 per cent is a very excellent reagent, especially for the more superficial varicose veins, but this solution should never be employed in cases where kidney or bladder trouble exists, and not more than two cubic centimeters or one injection should be given at one sitting.

Some writers advise against injecting the thin, blue superficial veins, whose removal is desired purely for cosmetic reasons. It is true that the injection of these veins requires very careful technique, but we have found that, by introducing the needle laterally through the healthy skin and pointing it forward below the vein, it is possible to enter the vein through the posterior wall. This method has yielded very excellent results. We

feel it is justifiable in certain cases to obliterate the small branchlike venules, which we sometimes find in connection with varicose veins, and for such cases we employ the 60 per cent invert sugar solution or the sublimate solution.

One point which has not been mentioned by other authors is the precaution which should be observed in making injections in the ankle region. Because of the nerves which emerge near the interior and exterior malleoli, one should avoid making injections in this region. Violent ascending pains may be caused during the injections and a more or less chronic neuritis may be induced if this region is not avoided.

During the course of the treatments, when the leg becomes painful and swollen, due to the chemically induced "venitis," we advise the use of cold, moist compresses. This measure seems to give more relief than anything else. Ice-bags should be avoided. Our experience is based on more than 3500 cases with over 120,000 injections.

* * *

J. H. WOOLSEY AND R. J. MILLZNER, SAN FRANCISCO.—"Is it safe?" is the first thought one has regarding the treatment of varicose veins by chemical obliteration. Why do we not have embolic phenomena occur? Sicard, Forestier, and others have mentioned the tortuosity of the vein as the important factor in not allowing the thrombus to break away. In our opinion, the chief factors are direction of the current away from the heart and the rapid and firm organization of the thrombus and its wide attachment to the vein wall. Proof for the latter statement was obtained by our good fortune to secure specimens of veins chemically obliterated over periods from fifteen minutes up to sixty days.

As to technique, the main concern is that the chemical solution is injected intravenously and that it remains there. This means preferably a small needle (No. 26 gauge); that the blood be withdrawn at the start and, if in doubt, during the injection; and that pressure be made over the site of puncture postinjection for five to ten minutes so as to prevent leakage. Since the flow of blood in a varicose vein with the extremity in a dependent position is away from the heart, it is best to have the patient sit on a table with the leg suspended or, in the instance of small veins, to stand. The emptying of the veins of all blood is, in our experience, nonessential, for equally as good results occur with the veins full of blood. The basic principle of the chemical treatment is to damage the intima of the vein wall. A thrombosis then follows immediately in some small veins and up to seventy-two hours' postinjection in the larger veins. It is wise, therefore, to have the patient wear a pressure bandage for that length of time so as to keep, if possible, the vein walls

apposed. This will prevent the cording effect and lessen the surrounding tissue reaction.

The treatment is safe; the solution must be injected into and remain in the lumen of the vein; the dependent position of the extremity for injection is best; and a pressure bandage worn after injection for at least seventy-two hours is essential.

* * *

H. O. BAMES, LOS ANGELES.—My discussion is limited to the treatment of superficial varicosities, manifesting themselves as patches of spiderweb-like reddish or purplish discolorations, frequently not sharply distinguishable from nevus vascularis.

Entering these small venules with a needle is a practical impossibility. Peri-injection is, therefore, the method of choice. Quinin urea-hydrochlorid in 5 per cent solution, used exactly as in infiltrative local anesthesia, works very satisfactorily. It is necessary to raise an intradermal wheal as well as distend the subcutaneous area. More than one treatment may be required. A not infrequent result is the enlargement of one of the constituent veins; this may then be injected by any of the methods applicable to larger veins.

Attention is drawn to a danger factor. As proof of having entered a vein we accept the fact that blood can be drawn back into the syringe. Withdrawal of blood is possible as long as the mouth of the needle, or any portion of it, lies in the lumen of the vein, though the point of the needle might have penetrated the opposite wall. The forward pressure exerted against the syringe while making the injection can easily force the bevel of the needle to follow its point and much, if not all, the solution may be distributed in the perivenous tissue.

If alcohol, sodium salicylate, or invert sugar be the injecting material in such a case, the result is merely unnecessary pain and induration for some time; if sodium chlorid is used the result is extensive necrosis and sloughing of the overlying skin; while if quinin solution is used there is no disagreeable result whatever. A proper injection may be made a few days later. Quinin is, therefore, the choice wherever the small lumen of the vein leaves the choice of injection material the least bit uncertain.

While the smaller veins are not looked upon by the profession as detrimental to health, by the laity they are considered quite disfiguring and their obliteration is demanded by them on the basis of unsightliness.

* * *

THOMAS O. BURGER AND HALL G. HOLDER, SAN DIEGO.—Success in the injection treatment of varicose veins is dependent on (1) proper understanding of pathological physiology of the varicose state; (2) knowledge of the action of sclerosing solutions; and (3) recognition of the several contraindications to this method of treatment.

I. We have demonstrated by the intravenous use of lipiodol and sodium iodid the static or reversed circulation of blood in varicose veins with insufficiency of the valves in the saphenous vein

and perforating veins, either alone, or in combination. Actual increase in venous pressure is thus produced, ranging from 100 to 300 times normal. Associated with venous stasis there is an increased carbon dioxid content. The anoxemia, with resulting acidosis, explains the nutritional disturbances in the surrounding tissues, resulting in ulcer formation.

II. Three principal methods in treatment have been employed: (1) palliative support; (2) surgical removal; and (3) obliteration by sclerosing solutions.

Surgical removal of the affected segment has been practiced for years, but has met with numerous failures in that reformation of the varices have occurred through other anastomotic channels. Frequently the perforating veins are the source of these recurrences, as they are not amenable to surgical removal. In addition surgery represents long hospitalization, frequently worse disfigurement, and all too often increased invalidism.

The use of sclerosing solutions intravenously in varicose veins does not act to produce blood coagulation; they are in effect anti-coagulants *in vivo* as *in vitro*. There is first an irritation of the endothelium with congestion and proliferation. The fibrin of the blood is deposited on the wall of the injected vessel, adhering to the entire surface of the injured endothelium. In the third stage, sclerosis sets in involving all coats followed by atrophy. This chemical irritation of the vein, designated by Sicard as a venitis, is not to be confused in any way with the infectious process phlebitis. In phlebitis there is an inflammatory process with thrombosis, and tendency to embolism.

Trout (*Arch. Surg.*, June 1929) stated he considered the injection treatment as unsurgical, dangerous from the standpoint of embolism and altogether a "blind procedure" in spite of the many favorable reports. This unreasonable attitude cannot be justified. In cases properly selected there is abundant statistical proof that embolism practically never occurs for the two reasons indicated above, *i. e.*, (1) static or reversed circulation in varices, and (2) action of sclerosing solutions to produce a venitis or organization of the vein rather than a thrombus with tendency to embolism.

III. No patient should be treated until a complete history has been taken, physical examination, urinalysis and, in some instances, Wassermann done. All possible foci of infection should be eradicated. Careful study of the circulation of the extremity should be made, using the Trendelenburg and constriction tests. Further information as to the capillary circulation is obtained by the histamin acid phosphate intradermal wheal comparison. In the presence of thrombophlebitis, unless quiescent for one year, injection is positively unsafe. Positive contraindications are represented by foci of infection in other organs, any degree of femoral thrombosis, arterial disease of the extremity, chronic degenerative diseases, senility, and pregnancy.

California and Western Medicine

Owned and Published by the

CALIFORNIA MEDICAL ASSOCIATION

Official Organ of the California, Utah and Nevada Medical Associations

1016 BALBOA BUILDING, 593 MARKET STREET, SAN FRANCISCO

Telephone Douglas 0062

Editors

Associate Editor for Nevada . . .

Associate Editor for Utah

{ GEORGE H. KRESS

{ EMMA W. POPE

HORACE J. BROWN

J. U. GIESY

Subscription prices, \$5.00 (\$6.00 for foreign countries);

single copies, 50 cents.

Volumes begin with the first of January and the first of July.

Subscriptions may commence at any time.

Change of Address.—Request for change of address should

give both the old and the new address. No change in any

address on the mailing list will be made until such change is

requested by county secretaries or by the member concerned.

Advertisements.—The journal is published on the seventh of

the month. Advertising copy must be received not later than

the 15th of the month preceding issue. Advertising rates will

be sent on request.

Responsibility for Statements and Conclusions in Original

Articles.—Authors are responsible for all statements, conclu-

sions and methods of presenting their subjects. These may or

may not be in harmony with the views of the editorial staff.

It is aimed to permit authors to have as wide latitude as the

general policy of the journal and the demands on its space may

permit. The right to reduce or reject any article is always

reserved.

Contributions—Exclusive Publication.—Articles are accepted

for publication on condition that they are contributed solely to

this journal.

Leaflet Regarding Rules of Publication.—California and

Western Medicine has prepared a leaflet explaining its rules

regarding publication. This leaflet gives suggestions on the

preparation of manuscripts and of illustrations. It is suggested

that contributors to this journal write to its office requesting

a copy of this leaflet.

EDITORIALS

PORTLAND ADDRESSES OF THE THREE

A. M. A. PRESIDENTS

At the recent Portland meeting of the American Medical Association, Retiring President Dr. W. S. Thayer of Baltimore, President M. L. Harris of Chicago, and President-elect William Gerry Morgan of Washington, D. C., made formal or informal addresses which were of considerable interest to members of the national association, and presumably also to the local newspapers and national press bureaus.

* * *

Doctor Thayer's Remarks on Tolerance and Temperance.—It must have been somewhat of a shock to many who had only casually met Doctor Thayer to have heard his American Medical Association address. For he impresses most persons as he is remembered, for instance, by many California Medical Association members who were present with him at the San Diego session, as being an able colleague of unusually gentle and kindly thought and bearing. In a somewhat short address on the work of the American Medical Association he stated, among other things, the following:

Here in America we have gone along . . . with a government by the majority tempered by safeguards, all owing a fair measure of local independence. On this model has been formed the constitution of the American Medical Association. Government by the

majority is wholesome and beneficent so long as it is tolerant and considerate. . . . But there are lengths beyond which a majority may not go. When in a country like ours the national government attempts to legislate for the whole country as to what we may or may not eat or drink, or how we may dress, as to our religious beliefs, or what we may or may not read, this is to interfere with rights that are sacred to every English-speaking man. This is no longer republican government; it is tyranny. . . . As a nation, we have of recent years set a rather sorry example in the passage of inconsiderate, ill-considered and intolerant prescriptions and prohibitions; prescriptions and prohibitions some of which may be proper enough in certain localities where they represent the desire of the majority, but which, when applied to the country at large, interfere with the personal liberties of the people. Such laws cannot be enforced; they defeat their own ends. Intolerance is the most fatal enemy of liberty. . . .

As was to be expected, thoughts such as the above promptly brought down upon Doctor Thayer an avalanche of adverse criticism, and especially from a prominent salaried official of one of the prohibition organizations. A Portland newspaper played up these comments, and the press agencies sent out dispatches on what seemed to be a good controversial news item. Which it was, but which, after all, made it possible for Doctor Thayer's remarks to reach a larger national audience.

In passing, it may be stated that Doctor Thayer's address was received with much applause by the House of Delegates of the American Medical Association and that when the subject was brought up at a later meeting of the House of Delegates its members again went on record as being practically unanimous in supporting the viewpoints brought forward by Doctor Thayer. The Reference Committee report on the address, which was adopted by the House of Delegates, reads as follows:

The committee especially commends and endorses the sentiments expressed by President Thayer concerning legislative enactments that are inimical to the best interests of the medical profession and public, by restricting medical men as to what shall and what shall not be prescribed for the relief of human ills. It does, however, recognize the wisdom of the advice of President Thayer to the effect that these questions should be considered by this House of Delegates in a spirit of temperance and good judgment, and with proper respect for our traditions.

If some of the somewhat intemperate advocates of the supposed temperance, which is known as prohibition, would but heed Doctor Thayer's advice, more progress for all concerned probably would be the good result, and the best interests of our country and people, and also of modern-day civilization would be better served.

* * *

Suggestions of President M. L. Harris on the Cost of Medical Care.—If the viewpoints of Doctor Thayer met with outright and caustic criticism from some laymen, the recommendation of the incoming president, Dr. M. L. Harris of Chicago, on a means of solving some of the problems incident to the cost of medical care may be said to have also met with some opposition; only

this time it was of a milder form and from within. Doctor Harris stated:

One of the complaints frequently made against the medical profession is the lack of suitable provisions for the distribution of high-class medical services to the mass of people at a cost within their means. . . . This I hold to be an undisputed obligation of the profession, and I have proposed a plan which I believe will enable it to meet this obligation fully, and which will result in great benefit to the masses as well as to the profession.

This plan, which I propose, has already been published in the *Journal of the American Medical Association*, and consists, in brief, of each county medical society incorporating and forming a medical center. . . . The organization should be in a sense a pay clinic owned and controlled by the profession. Every person receiving services should pay. Those who are able to pay regular fees should have their own physician, as at present; while those not able to pay regular fees should be treated at the Center and should be charged a fee, depending on their economic status and the character of the services rendered. Those who are unable to pay anything are charges on the community and should be paid for by the community at rates to be agreed on by the community and the organization. . . .

In the consideration of the address of President Harris by the Reference Committee, the House voted:

That the increasing cost of sickness cannot be justly charged to the medical profession inasmuch as in a general way compensation for medical and surgical services has not increased in proportion to the increased cost of sickness occasioned by other contributing factors; nor has the compensation of physicians and surgeons increased to anything like the increase that has occurred in the cost of everything else. The committee recognizes that the cost of sickness may not be evenly distributed, and may depend on conditions over which the physician has no control. Competent and adequate service should be available to all, but the plan of distribution will require a continuation of constructive thought. . . . Your committee does believe that this whole subject should receive the serious consideration of the medical profession, and that the problems confronting us in connection therewith must be solved by the medical profession and not by lay individuals or lay organizations. . . .

It is quite evident that the procedures of Doctor Harris, if they were put into effect in the many counties in the United States, would work a revolution in many present-day methods of medical practice. President Harris is to be commended for bringing forward a definite plan to counteract the evils associated with state medicine toward which in many localities medical practice seems to be drifting. Out of the study and discussion of this important problem should come suggestions for better solving some of these important problems which face the medical profession and the lay public. It is our impression that in any plan to be adopted in the future some of the procedures outlined by Doctor Harris will probably find a place for trial.

Here, in California, a number of members of the California Medical Association have been giving serious consideration to a tentative plan for bringing better medical and surgical care to citizens of moderate incomes. The very poor and

the rich have long had access to the best of medical and surgical care. It is the citizenship of moderate annual income, say of \$2500 and less, which needs alleviation of some of its burdens. The California plan referred to has been developed by a prominent member of the profession who has had a large experience in caring for hundreds of employees. It is hoped that from the further study of the procedures recommended by him may develop an arrangement that could be of much benefit to the practitioners of nonsectarian medicine who make up the membership of the California Medical Association. It is possible that a discussion of the plan which our colleague proposes may be given special notice in future issues of CALIFORNIA AND WESTERN MEDICINE.

* * *

President-elect W. G. Morgan's Comments on the Cost of Medical Care.—In his informal acceptance speech following his election as president-elect, Doctor Morgan also took up the subject of medical care costs and brought out some important points. He said:

I am a simple bedside doctor. . . . As I conceive the problem of the high cost of medical care, the acuteness of this situation has not come about through the demand of the so-called oppressed ones. The acuteness has been thrust upon us largely through the activities of the mentally bored, idle rich who have sought this outlet for their energies. I feel there is at present an acute and urgent demand on the part of the public for the lessening of the burdens. I also conceive it that the burden does not come through the fee of the doctor himself. It comes from other ways. The solution of this problem has to be faced because of that class of sometimes pseudocharitable workers who foist it upon us. . . . I shall do my utmost to keep in mind the needs of the rank and file of those earnest, able, conscientious physicians who are laboring in the small communities and in the outlying districts. . . .

The informal statements of Doctor Morgan must meet with approbation by many physicians who in recent years have had special opportunities to observe the conditions on which he comments. It is most important that members of the medical profession should be alert to their own self-respect when they give gratuitous services in clinics, the money values of which run into thousands of dollars. Let us repeat what has been previously advocated in this column, that it would be a wise policy for every medical and surgical staff in a nonprofit clinic, dispensary or hospital, if the money values of all professional services which are each year rendered were computed and printed in the annual reports side by side with other donations. Lay associates and lay executives should not be permitted to usurp authority and places in such organizations altogether out of proportion to the value of their services or of their money or similar donations. If physicians are good enough to do the altruistic work which alone makes possible the existence of such clinics and hospitals, they are good enough, with the background of cultural and special training which they possess, to have a deciding hand in working

out the destinies of the institutions with which they are connected. Lay directors and boards are necessary factors, but the value of their labors is not so great that they should be permitted to usurp unto themselves powers and authority which place in a secondary position the members of the medical profession, who do the major work in such institutions.

All in all, the addresses of Doctors Thayer, Harris, and Morgan contain much food for thought. It will be well for all members of the profession to think of these problems, lest through nonthinking thereon the thinking be done by others who, with lesser experience, will attempt to put their theories in operation to the detriment of organized medicine as a whole, and of the just professional interests of its members.

CARE OF NARCOTIC ADDICTS—A MEDICO-LEGAL PROBLEM

Narcotic Addicts as Such Are Sick Human Beings.—In this issue of CALIFORNIA AND WESTERN MEDICINE is printed an article by Dr. Thomas F. Joyce, a colleague who is in charge of the somewhat recently instituted State Narcotic Hospital at Spadra, in Los Angeles County, and who writes of its work. This article should be of interest to members of the California, Nevada, and Utah Medical Associations. For a narcotic addict is a sick human being, and physicians have as their professional function the care of sick persons. To deny this responsibility in the care of any sick humans would be to take us back a hundred or so years when the insane were cared for, not by medical men, but by the police. Members of the medical profession who are laggard in the acceptance of their responsibilities to narcotic addicts, by such action practically revert in their standards of practice to the period just mentioned; when the insane were assumed to be the wards of the police rather than of physicians, and were treated by methods far from those now deemed suitable for human beings.

The article by Joyce tells how California is making an effort to better handle this important matter of the care of narcotic addicts. Members of the medical profession will be able to coöperate in this humanitarian work of the state if they understand the lines along which this state hospital is being conducted. That is why special mention is made of the article.

* * *

A Recent Los Angeles Experience with Ambulatory Addicts.—It may not be out of place to mention here a phase of this narcotic problem which had its settings in the city of Los Angeles. The sad condition of some of these narcotic addicts, a few years ago, attracted the attention of several members of the Los Angeles County Medical Association. The fact that from time to time deserving members of the medical profession were arrested for presumably giving narcotics to addicts, and through such misplaced sympathy to

have their reputations of years blasted as it were, in a moment, helped to accentuate this interest. The difficulty facing these colleagues was to find ways and means of properly handling a deplorable state of affairs which was not a theory, but a fact. Out of the conferences came the formation of the Los Angeles County Medical Association committee of some twenty or so physicians, who were to examine and pass on narcotic addicts. Much voluntary, nonremunerative work was done by a number of these physicians in order at one and the same time to protect society and yet give these narcotic addicts a decent chance. As so often happens in committee activities, the burden of the work finally began to fall on less than a half-dozen members of the committee who, while willing to do their share of altruistic service, nevertheless began to feel that it was an unjust arrangement to have themselves also subjected in their private office hours to the annoyances associated with the importunities and cravings of some of these unfortunate victims of narcotic drugs.

So the city health department was persuaded to designate one of its staff to give the treatments, with members of the committee before referred to acting as an advisory body. This plan worked very well for a time, but finally several lay inspectors and police officers again entered the picture, for a considerable number of these addicts are always potential or active criminals. The assistant city physician, in giving treatment to one of the addicts, found himself in a corner and gave up the work. It appeared that all that had been built up would be destroyed and that these addicts would be set adrift to prey upon society, with the police in turn preying upon them. At this stage, one member of the committee, who happens to be an officer of the California Medical Association, stepped into the breach and stated he would carry on the clinic, make examinations and give treatments, and if the police objected they could arrest him. He was determined that these addicts, who with sufficient narcotic treatment would remain as useful citizens, should have that chance, and that others of a worse type would do less harm to society if kept under sympathetic surveillance. Out of his position and through consultations with members of the courts, a new arrangement came into being. Today the health department of the city of Los Angeles, the psychopathic division of the Los Angeles County General Hospital, the State Narcotic Hospital at Spadra, and state and federation narcotic officers, all have a close affiliation and coöperative understanding. These agencies, in connection with the city and county police departments and the inspector deputies of the California Board of Pharmacy, are now pooling their efforts in order to work out the best possible means of solving this narcotic problem, the proper solution of which is so important to the welfare of the citizens of California.

* * *

State Narcotic Hospital at Spadra Worthy of Support.—This recital of some recent events

brings before us a picture which shows how some members of the medical profession carry on in altruistic service to lay fellows, when participation and leadership in the work assumed is apt to not only bring little or no praise, but where one mistake of judgment might draw down blame or disaster; a heavy penalty to those who have in their minds and hearts no more than the thought and desire to serve their fellows. California can take pride in making its modest beginning of the State Narcotic Hospital at Spadra, and should be grateful to all those who took an active part in bringing the institution into being. It is hoped the executive and legislative officers of California will sense the importance and gravity of the work and that they will give the institution that adequate support which its objects so richly merit.

RESEARCH AND CLINICAL PRIZE PAPERS OF THE C. M. A.

How the Annual Research and Clinical Prizes of the California Medical Association Came Into Being.—Several years ago, after considerable discussion, the Council of the California Medical Association came to the conclusion that it would be to the advantage of the Association and to all concerned if two prizes of \$150 each were annually granted to members of the California Medical Association: one prize for an outstanding paper or study on a clinical subject, and the other prize for a paper on a more general research. After a brief trial it became evident that a considerable number of members who were seemingly interested in these prizes were, nevertheless, somewhat reluctant to engage in what seemed to partake too much of a competitive contest. The rules were accordingly broadened, so that a member who intended to present a paper at one of the section meetings of an annual session would be permitted to do so, and yet through proper notification could have his paper duly entered in one of the prize competitions. The Council also decided to issue a dignified certificate of award so that the winners might have a tangible reminder of the contest after the money emoluments had been dissipated.

In the July issue of CALIFORNIA AND WESTERN MEDICINE, on page 65, were printed the rules and general information concerning these contests. (See also page 216, in this issue.) The secretary of the Association will be glad to answer letters for information. Papers are supposed to be not more than four thousand words in length.

* * *

Officers Were Surprised When No Prize Papers Were Submitted at the 1929 San Diego Annual Session.—The officers of the Association were much surprised when not a single clinical or research paper was presented at the 1929 San Diego annual session. In the event of a similar experience next year at Del Monte, the Council will be obliged to conclude that the prizes are of little interest to any of the more than 4500 members of the California Medical Association;

and the question of discontinuing them necessarily will come up for consideration.

The officers of the Association believe the prizes should be continued, for among the many members of the California Medical Association there are many who think clearly and ably on clinical and other subjects. Attention to these prizes is here given in order to urge members to put aside their diffidence and to enter their papers. No publicity is attached thereto for those who do not receive prizes; for only those papers with names of authors are mentioned in the Prize Committee report which receive the stipulated prizes or honorable mention. All papers intended for the 1930 prize competition consideration must be in the hands of the secretary of the Association not later than December 20, 1929. If work on such papers is lagging, authors are reminded that it would be wise to put in some extra work during the summer months, before the busy fall and holiday seasons are at hand. Prize or no prize, the efforts to make studies and produce papers worthy of prize consideration will in themselves amply reward all members who submit papers. It is hoped that the Prize Committee, of which Dr. George Dock is chairman, will have serious work before it after December 20, 1929. Nothing would give that committee greater pleasure.

MEDICAL DIPLOMA MILL IN ILLINOIS— HAS CALIFORNIA A BRANCH OFFICE?

Illinois Diploma Mill Scandal of 1922 Reappears.—California newspapers of August 7 printed Associated Press dispatches with a Chicago item which stated that "an assistant state's attorney of Illinois, who until recently was head of the indictment department of the state's attorney's office, was seized for questioning early today, when investigators were told that he had disclosed the state's plans to persons involved in the medical diploma mill investigation."

An editorial in the *Journal of the American Medical Association* of August 3, in discussing this new Illinois diploma scandal, stated: "The newspapers report that the license mill ring of which Miller is said to be the head is alleged to have issued more than a thousand licenses at an average of about \$2000 each. The journal hopes that the present investigation may amount to more than did the one conducted seven years ago."

Readers of CALIFORNIA AND WESTERN MEDICINE may recall that in its issue of January 1929, pages 65 to 69, was printed a most illuminating survey of the original Illinois scandal of 1922. Editorial mention also was made of that article in connection with a discussion of the original draft of the plan for the proposed California Department of Professional and Vocational Standards which was then before the legislature.

* * *

Leopards Do not Change Their Spots.—It is most illuminating to note that, according to the *Journal of the American Medical Association*,

the W. H. H. Miller, who in 1922, as director of the Illinois State Department of Registration and Education, sat in the cabinet of the then Governor, Len Small, is also involved in this new scandal. In 1922, according to H. C. Christensen, whose article was printed in full in the January 1929 issue of CALIFORNIA AND WESTERN MEDICINE, there was a sliding scale of prices from \$500 to \$2500 for the purchase of illegal licenses in medicine, pharmacy, and other professions. The number of false licenses which were issued in Illinois in 1922 is supposed to have run into the hundreds. Illinois at that time was so derelict in its responsibilities of punishing the members of the diploma mill ring and in house-cleaning its registration records that most medical examining boards of the United States demand written examinations from all persons holding Illinois licenses for the period in question. This is certainly a sad reflection on so great a state of the Union, and on the state which is the central seat and office of the American Medical Association.

* * *

Counterfeit Diplomas and Seals in the Present Scandal.—In the present scandal, plates were made of diplomas of medical schools of the rank of Northwestern and Chicago; and duplications were even made of the seals of the institutions so that accessory correspondence might have the presumable sanction of official seals. The Chicago Tribune of August 8 prints photographs of Divers Martin and Blair bringing up forged seals from the bottom of the lake, off Navy Pier, where they had been thrown by some of those who are among the guilty.

It is to be regretted that the Illinois Medical Association and the Cook County Medical Society were not in position in 1922 to aid the authorities to bring all the miscreants of the diploma mill scandal of that period to justice. For few crimes are worse than that of giving to incompetent persons the presumably legal right to hold the health and lives of fellows in their keeping. The havoc done by the illegal possessors of the Illinois licenses of 1922 will probably never be known. It is to be hoped that the Illinois Medical Association and the Cook County Medical Society will be unceasing in their efforts to have proper punishment meted out to the present culprits. Otherwise there is danger of these Illinois diploma mill scandals being repeated.

* * *

Was a Branch Diploma Mill Office in California?—As newspapers dealing with this recent Illinois scandal were being gathered by the writer, he received copies of letters from Dr. C. B. Pinkham, secretary of the California Board of Medical Examiners, which indicated that Doctor Pinkham's office and investigators had discovered a possible California branch of these Illinois fakers. Excerpts from Doctor Pinkham's letters, which are printed in the correspondence column of the Miscellany Department of this issue, provoke interesting thought. California should be

grateful that the representatives of its Board of Medical Examiners were alert to what may have been a branch office of the Illinois diploma mill group; and that active work in running down the Higashi diploma mill of Los Angeles was started several months before the present Illinois scandal came to light.

* * *

Doctor Pinkham's Suggestion Worthy of Consideration.—Doctor Pinkham's suggestion of the need of a California law making it a criminal offense to counterfeit seals of educational institutions is well made. The Committee on Public Policy of the California Medical Association might well confer with the California Board of Medical Examiners and with the presidents of institutions of higher learning, so that such a proposed bill could be considered and studied, to be presented to the California Legislature of 1931. In the meantime it behooves not only the California Board of Medical Examiners, but all county societies and members of the California Medical Association to be on the lookout for holders of illegal diplomas. So far as organized nonsectarian medicine of California is concerned, it is hoped that the production of any such spectacle as is now presented in the recrudescence of the Illinois diploma ring of 1922 will not be possible.

To our colleagues and the medical institutions of Illinois we extend our sympathy in the unsavory mess in which they have been made the victims. We express the hope that active committees of the medical organizations there located will exercise a live interest in the present Chicago scandal, and use all possible resources to make the punishment so severe for the present offenders that a repetition of such a scandal will be quite out of the question. For a diploma mill scandal once in every seven years would be much too much.

Some Toxic Gases to Be Studied.—Warnings have been voiced at the meetings of the American Medical Association in Portland, Oregon, with respect to certain dangers incident to the use of methylchlorid in refrigerating machines.

It was claimed by one writer that toxic encephalitis and possibly other diseases may be caused by the inhalation of this gas and a survey of toxic gases was recommended.

It was also claimed that there is a mild form of carbon monoxid poisoning which may be the cause of forms of anemia, and which affects those exposed to low concentrations of this gas.

If these suggestions are valid it is certainly time that more should be known about the unseen danger of gases and the American Medical Association will add to its prestige by putting the facts before the public.

Many of our comforts may not be without serious dangers. Homes should be the safest places, but even without these newer dangers the hazards of homes are already large, for statistics show that falls, burns, and many other accidents in homes add materially to the death rate.—*The New England Journal of Medicine*, July 25, 1929.

MEDICINE TODAY

Current comment on medical progress, discussion of selected topics from recent books or periodic literature, by contributing members. Every member of the California Medical Association is invited to submit discussion suitable for publication in this department. No discussion should be over five hundred words in length.

Orthopedics

Painful Feet.—Among the minor ills which affect the major portion of our population may be counted painful feet.

The etiology of this defect may be found in one of the two factors:

1. Remote foci of infection of minute or massive character; long-lasting constitutional diseases necessitating recumbency or effecting a general muscular weakness; and carrying of excessive weight, either artificial or natural, such as occurs in pregnancy, when not only the uterus with its contents, but the increase of adiposity augment the body weight.

2. Local trauma, usually of long duration which strains and, eventually, stretches the soft foot structures and injures the osseous system of the foot. This trauma may be caused by ill-fitting shoes, by faulty foot posture, and by prolonged but unaccustomed standing and walking, as it happens in a rapid change of occupation from a sedentary to one demanding the upright posture most of the day; worse yet, when, in addition to the body weight, the carrying of artificial loads is required.

An etiological axiom may be formulated as follows: Painful feet result from the establishment of a disproportion between the weight-bearing capacity of the feet and the load they are called upon to carry.

Either the foot structures become inefficient in virtue of constitutional diseases and foci of infection, or the foot insufficiency results from local injury or excessive superimposed weight.

Symptomatology.—Pain, the predominate symptom, may be named "pain of insufficiency," which differs from that of inflammation or of torn or broken tissues. It is a feeling of fatigue which turns into a dull pain. The appearance of the feet may be normal; they do not necessarily present the deformity of flatness. What actually causes pain in feet is the process of growing flat. The operation of changing the configuration of the feet is what elicits pain. Markedly developed flat feet may be painless because the individual bones, the ligaments and muscles have already in course of time, and gradually, adapted themselves to the demands placed upon them. The foot structures have become reconstructed and re-formed to their need. It was this procedure of adaptation to the new requirements which expressed itself as pain.

Treatment.—On the etiological factors involved as disclosed by a carefully taken history, and the physical—local and general—findings, should the treatment be based if permanent result and retention of the shape of the feet are desired. Foci of

infection should be removed whenever possible. Foot and leg exercises and massage should be practiced if long recumbency in any illness is required. Sudden change of a sedentary occupation to one necessitating much walking and standing should be avoided. Injurious influences such as ill-fitting, narrow and tight foot gear, commercial arch supports and other harmful contrivances should be discarded. While these procedures are of a curative nature, they are of a prophylactic as well, and may serve as instruction to the prospective and the actual foot sufferers.

The painful feet need local treatment, besides the wearing of corrective shoes and supports of adequate construction in each individual instance as a temporary measure.

The local treatment consists in the application of physical measures. To hasten the absorption of inflammatory deposits, to increase the circulation and to overcome the contractures in the joints, negative galvanism and diathermy are used beneficially. To gain muscle strength and increase joint motion, manipulation, interrupted electrical stimulation, massage and mechanical vibration are applied. This treatment must be given in addition to the temporary wearing of well-built shoes, made-to-order supports, and physiological walking and standing.

A. GOTTLIEB, Los Angeles.

Cardiology

Rheumatic Fever Convalescence.—Most physicians give competent care to rheumatic fever patients. Patients with mild attacks will do nicely with only bed rest and good general care. With proper antirheumatic treatment they improve rapidly. It is at this critical time of the beginning of convalescence that the physician needs to be on his guard. The patients feel better and wish to be up and going, and many times are permitted to do so to their great detriment.

If relief in the form of subsidence of fever and arthritis is to be the sole guide, the physician will have failed in his duty to the patient. For a large number of these patients have developed only a partial immunity to the infection, and will in a short time have a return of all their symptoms; sometimes more severe and damaging than in the first cycle.

How are we to determine when a rheumatic fever patient may be safely discharged? Much can be written on the subject, but to put the answer briefly, there are four things that can safely be used as guides: these are fever, arthritis, subcutaneous nodules, and leukocytosis. Until

these symptoms and signs disappear, the patient, be he child or adult, must have complete bed rest.

It is not unusual to find a patient feeling well, anxious to be up, eating heartily, and looking fine, but still having a slight leukocytosis. Unless the physician is firm, and also diplomatic in pointing out the dangers to the patient and family, dire results may follow and a cardiac cripple be started on a lifetime of invalidism. Some of these cases in children require a length of convalescence equal to tuberculosis. It is sometimes very hard to convince the mother or family when they see the patient looking and feeling so well. But this is the crucial time. This is the time when we need to be real salesmen and show success in selling ourselves and our ideas. If we could do this more often and more successfully, rheumatic heart disease would start on a downward pathway in the list of the causes of death.

Leukocytosis and subcutaneous nodules are things about which the members of the family as a rule have no knowledge. They know nothing about them, know nothing of what they mean, and probably never heard of them before. It is up to the physician to point out to them exactly what they do mean and that unless this danger signal is heeded these patients will return with more acute rheumatic fever or, what is still worse, return with irreparable damage to the myocardium or endocardium of the heart. A white count should be taken at least every third day, and the patient should not be allowed up until there has been a good liberal allowance of time in which a leukocytosis has not existed. Before adolescence, the leukocytosis of childhood may be slightly confusing, but it is surely wise to err on the safe side.

R. MANNING CLARKE, Los Angeles.

Ophthalmology

The Slit-lamp.—The corneal microscope, combined with the slit-lamp, is a comparatively recent instrument that has made for itself a real place with many ophthalmologists. The slit-lamp was first devised by Gullstrand, and consists of a very strong light cut down to the form of a thin ribbon by appropriate lenses and diaphragms. When this ribbon of light passes through the transparent media of the eye in a dark room, it has the optical effect of "cutting out" or isolating a thin slice of the tissue through which it passes. This optical section can then be examined with the binocular microscope *in situ*, just as one examines a thin slice of tissue on a slide with the regular microscope. With the higher magnifications and special manipulation the individual cells of the endothelium on the posterior surface of the cornea can be made out. Thus very early signs of inflammation of the uvea may be found. Morsman, in the *Archives of Ophthalmology* has described the technique of this examination and the normal and abnormal findings. The beginning of sympathetic ophthalmia can be detected by the slit-lamp before it manifests itself in any other way. The presence

of cells in the aqueous of the retrobulbar space and anterior chamber is first detected by slit-lamp examination.

The literature upon the slit-lamp is now considerable, and there are fine atlases published by Vogt of Zurich and by Meesman of Berlin. The instrument is of great value in legal and industrial injuries. Butler, in his textbook on the slit-lamp, is such an enthusiast that he states: "The ophthalmic surgeon who does not employ the instrument stands, sooner or later, to lose prestige in court." There are many phases of slit-lamp findings which at the present time have only an academic interest but which will become of practical value as our knowledge of the interpretation of them increases. For this reason those oculists using this instrument should keep accurate records of examinations and report all unusual observations.

M. F. WEYMANN, Los Angeles.

Bacteriology

Qualitatively Defective Antibodies.—The dominant immunological theory of the past has pictured each specific antibody as a qualitatively increased hereditary cell component. Under this theory clinicians have been forced to conclude that all differences in specific clinical phenomena are due to differences in the amount or in the topographical distribution of this qualitatively constant defensive chemical substance.

In defiance of this theory immunologists have recently dared speak of qualitatively variable antibodies. Dr. S. B. Hooker of the Evans Memorial, Boston,¹ for example, reports that detailed study of antistreptococcus sera prepared from rabbits show certain antisera so atypical as to be explained only on this assumption.

W. H. MANWARING, Stanford University.

REFERENCE

1. Hooker, S. B.: Qualitative Diversity of Agglutinin Response Among Different Rabbits Treated with the Same Complex Antigen (*Streptococcus scarlatinae*), *Journal of Immunology*, xvi, p. 463, May 1929.

Report of the Peter Bent Brigham Hospital.—In the report of the physician-in-chief, Doctor Christian discusses first the neglected opportunities in hospital services for the education and development of house officers and residents. He advocates a larger ratio of internes to patients and a lightening of the clerical labor demanded, so that the men may have more time for investigation and reading. Several pages are devoted to a discussion of the value of dental hygiene; Doctor Christian would have a salaried part-time dental surgeon and a full-time assistant appointed to care for the teeth of patients not only from the point of view of cleanliness but from that of improved mastication as well. The problems of the outdoor department are considered in his report, and once more, as in his report for 1926, he advocates the establishment of a single diagnostic service instead of separate medical and surgical services.

Such criticisms as these apply to all hospitals. They stimulate us and lead us to wonder whether, after all, the systems which have been followed for so long may not be susceptible of improvement. The annual hospital report is an excellent medium for the presentation of such ideas.—*The New England Journal of Medicine*, August 15, 1929.

STATE MEDICAL ASSOCIATIONS

CALIFORNIA MEDICAL ASSOCIATION

MORTON R. GIBBONS.....President
LYELL C. KINNEY.....President-Elect
EMMA W. POPE.....Secretary

OFFICIAL NOTICES

Clinical Prizes—Rules for the Submission of Papers.—1. Any member of the California Medical Association is eligible to compete for the prizes. Any question arising as to the eligibility of a candidate or the admissibility of his essay will be settled by the decision of the Council.

2. Manuscripts must be typewritten on one side of the paper; they must be double spaced; and they must not be folded or rolled. Illustrations or charts must be marked with the title of the paper to which they belong.

3. Essays must not contain more than four thousand words. In judging a paper the committee will take into account the basic importance of the work done and its novelty; the thoroughness with which the research has been carried out; the clearness with which it has been written up; and the neatness of the manuscripts and illustrations.

4. Papers should be sent, preferably by registered mail, to Dr. Emma Pope, secretary of the California Medical Association, 1016 Balboa Building, San Francisco. They should be identified by a nom de plume or motto only. A separate envelope should be sent to Doctor Pope containing the author's name and his nom de plume or motto, so that after the award is made the name of the writer can be found. Any return addresses or distinguishing marks will be removed from the wrappers before the papers are turned over to the judges.

5. All papers must be in the hands of Doctor Pope before **February 15**, in order that the judges may finish their work in time for the meeting of the Association. Those entered for presentation at annual meeting also, must be sent in by **December 20**.

6. All papers entered in the Clinical or Research Prize Contest are eligible to be read at the annual meeting of the California Medical Association, provided the paper is received by the state secretary before **December 20** of the year preceding the annual meeting and approved by the Program Committee.

7. The judges reserve the right to withhold the award, in the event that no paper comes up to the standards of excellence they feel should be set.

8. If, in the judgment of the editors of CALIFORNIA AND WESTERN MEDICINE, and the editorial councilors, the paper on laboratory research is too technical or otherwise unsuitable for inclusion in CALIFORNIA AND WESTERN MEDICINE, the prize winner will be allowed to publish it in some special journal and will be required to make an abstract for the readers in California.

9. Inquiries relative to the prize contest should be addressed to the chairman of the committee, George Dock, M.D., 94 North Madison Avenue, Pasadena, California.

* * *

Rules Governing Papers Entered for Prize Competition and Also for Place on Annual Programs.—Send two copies of your paper to the state secretary, 1016 Balboa Building, San Francisco, before **December 20**,

with an unsigned note that you wish your essay submitted for a prize, and also read at the annual session. Sign your paper with your nom de plume. Also send your name in a sealed envelope with the nom de plume appearing on the outside. Use no stationery that in any way reveals your identity.

The state secretary shall deposit all nom de plume envelopes in a safe until the Prize Committee has made its decision.

The state secretary on receiving a prize paper which is submitted for presentation at the annual session shall submit said paper to the members of the Program Committee. The Program Committee will approve or disapprove it for place on the annual program. The Program Committee will inform the state secretary of its decision, and the secretary will then forward the titles of approved papers to the appropriate section secretary with a simple statement that the paper is acceptable for a place on the program. The Prize Committee will not be informed of this decision and action. A paper may be acceptable for a prize and not for a program, and vice versa.

The Prize Committee shall receive all papers which have been sent to the state secretary, whether approved for publication or not, on or before February 15. The sealed written report of the Prize Committee shall be submitted to the state office before March 1.

The Executive Committee, at the first meeting after March 1 of a given year, shall open the nom de plume envelopes and furnish the secretary the proper names of the authors for the published annual program.

The Council shall consider the report of the Prize Committee at its first meeting of the annual session, and shall announce the result at the first general meeting of the Association.

Extension Lecture Service.—With the termination of the vacation season, county medical societies renew their usual meetings and also their calls upon the state office for speakers at their monthly gatherings. So it comes about that the yearly extension lecturers are asked to revise their programs and to be prepared to furnish talks other than those previously listed.

An invitation is also yearly extended through these columns for volunteers in this work. The service is voluntary; there is no state fund to cover the expenses of travel; it does often take a member away from his work at an inopportune time, and yet those who give of their time and service make new contacts that are worth while, learn to address audiences easily, and are forced to rapid thinking and response in the discussion that regularly follows papers. Few members who have been placed upon the extension list have asked to have their names removed. Many have spoken with pleasure of their evenings with county societies.

This is fine organizational work. An active county society is the basis of a healthy state association. Whatever, therefore, calls out the members to a county meeting is an aid to the growth of the California Medical Association.

Will those members who are interested in this work and who have talks that are worth while to the general practitioner, and who are willing to be called upon occasionally to deliver these addresses to county societies, furnish their names and the subjects of their talks to the state office before the 20th of September?

COMPONENT COUNTY SOCIETIES

SAN DIEGO COUNTY GENERAL HOSPITAL STAFF MEETING

The last clinical staff meeting of the San Diego County General Hospital staff, as reported by G. R. Stevenson, was held May 29, with Dr. John O. Kellogg, chairman, in the chair. A very interesting group of urological problems was presented by Dr. Ed Chamberlain, visiting staff urologist. The case histories were presented by interns of the staff, and cystoscopic and pyelographic reports were made by Dr. Paul E. Wedgewood, assistant superintendent of the hospital. Doctors Chamberlain and Molitor, visiting staff urologists, brought to the attention of the staff the similarity and symptoms of acute conditions in the abdomen which, upon careful study, were finally diagnosed as kidney and ureteral pathology. Several cases of double kidney and double ureters were presented which had given vague pains in the abdomen as a chief complaint. Meetings of the staff were adjourned for the summer season, and will be resumed on the fourth Tuesday in September.

The new intern and resident staffs of the San Diego County General Hospital began their services July 1, 1929, to serve rotating services for one year. Fourteen interns from the leading medical universities of the United States have reported for duty; and the two residents, Dr. O. S. Harbough, a graduate of Oregon University, and Dr. H. M. Tupper, a graduate of Colorado University School of Medicine, have been selected from last year's group of interns to serve as resident physicians in the hospital for a year. San Diego County Hospital offers a very interesting year's internship, due to the fact of a complete rotation through all of the different services during the twelve months.

Avertin, tribrom alcohol, a German product which has been experimented with in Germany since 1925 as a general anesthetic, has been introduced into the research work of the San Diego County General Hospital recently by the visiting surgical staff. A small amount was obtained through the efforts of Doctor Lee. Its application is by rectal instillation in a 3 per cent aqueous solution 100 milligrams per kilo body weight, with a definite alkaline reaction to Congo red. It has been used successfully in a limited number of urological operations. The hospital is not ready to make any official report, the group of cases treated not having been large enough to permit such. In fifteen or twenty minutes after administration the patient is soundly asleep, and with the exception of some lowering of the blood pressure, there has been no serious contraindication to the use of this new anesthetic other than in cases with markedly impaired renal function. Due to the fact that the anesthetic is excreted by the kidney, any interference with its rapid excretion after its usefulness has passed would prolong anesthesia beyond a safe period.

Since the organization of the Malignancy Board for the review and recommendations for treatment of cancer cases in the hospital, eighty-four cases have been reviewed and recommended for treatment, with eighteen deaths. Intensive study is being made by autopsy, and the pathologic study is being intensively carried out by the addition of photographic and microphotographic equipment in the laboratory for preservation of specimens and pathologic classification of different cellular types of carcinoma.

The laboratory is experimenting with a new process of preserving pathologic specimens to avoid destroying the natural color of the fresh specimen. This new process attracted a great deal of attention at the recent educational exhibit at the American Medical Association convention in Portland, and was demonstrated by the department of pathology from the university of Oregon School of Medicine. Keiserling's solutions No. 1 and No. 2 are preserving fluids, and during the process of hardening and dehydration a stream of illuminating gas is passed through the solution which fixes the normal color of the tissue. This

is a great improvement over the old type of specimen preserved in formalin with no natural coloring preserved nor lines of demarcation between the healthy and the normal tissues. For teaching purposes and clinical staff meetings it should prove very helpful.

ROBERT POLLOCK.

✱

SANTA BARBARA COUNTY

A special meeting of the Santa Barbara Medical Society was held as a dinner meeting at the University Club on Tuesday evening, July 23, in honor of Dr. Oswald S. Lowsley of the James B. Brady Urological Institute of New York City.

Doctor Brush, president of the society, was in the chair, and there were present at the dinner twenty-three members and one guest, about fifteen other members of the society arriving in time for the meeting.

At the conclusion of the dinner, Doctor Lowsley presented slides and gave a most interesting and instructive talk on some of the new methods of diagnosis and treatment in urological surgery.

The paper was discussed by Doctors Ullmann, Wills, Brown, and Robinson, and many questions were asked by other members of the society.

The president then announced that the regular meeting of the society would be held on August 12.

There being no further business the meeting adjourned.

WILLIAM H. EATON, *Secretary*.

CHANGES IN MEMBERSHIP

New Members

Humboldt County—Francis M. Stump.

Los Angeles County—Howard A. Ball, Bertram Brown, Charles M. Conkling, Alan E. Gage, Leland G. Hunnicutt, David H. Kling, Roy C. Leggitt, Rudolph R. Mueller, Herbert A. Niebergall, L. D. Riggs, Karl P. Stadlinger.

San Diego County—E. W. Cartwright, Viola J. Erlanger, Thomas M. Evans, C. M. Haviland.

Santa Barbara County—Albert Elliott.

Ventura County—Douglas W. Ritchie, Rudolph Patton.

Transferred Members

Salvatore Schiro, from Los Angeles to San Francisco County.

Deaths

Goetz, Alice Littlejohn. Died at Santa Barbara, June 8, 1929, age 49 years. Graduate of Howard University, Washington, D. C., 1906. Licensed in California, 1909. Doctor Goetz was a member of the Santa Barbara County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Howell, Ernest Titus Dean. Died at Los Angeles, June 25, 1929, age 46 years. Graduate of Columbia University College of Physicians and Surgeons, 1906. Licensed in California, 1918. Doctor Howell was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

Nutting, Charles Wilbur. Died at Weed, June 1, 1929, age 45. Graduate of Cooper Medical College, San Francisco, 1912. Licensed in California, 1912. Doctor Nutting was a member of the Siskiyou County Medical Society, the California Medical Association, and the American Medical Association.

* * *

NOTICE OF ERROR

In the August issue of California and Western Medicine, page 155, the notice of the death of Dr. Andrew Bonthius should read Dr. Frederick Andrew Bonthius, graduate of Northwestern University, 1902.

UTAH STATE MEDICAL ASSOCIATION

H. P. KIRTLEY, Salt Lake City.....President
 WILLIAM L. RICH, Salt Lake City.....President-Elect
 M. M. CRITCHLOW, Salt Lake City.....Secretary
 J. U. GIESY, 701 Medical Arts Building,
 Salt Lake City.....Associate Editor for Utah

OFFICIAL NOTICES

With the advent of fall, the chairman of the Publication Committee wishes to call the attention of the several secretaries of the component county societies to the fact that under present arrangements each and every one of them automatically becomes a member of this committee. The function of this new duty is that of collecting and forwarding to the associate editor for Utah, monthly, all reports of society meetings, on or before the tenth of each month. CALIFORNIA AND WESTERN MEDICINE, which carries the monthly Utah section, goes to press on or about the fifteenth of each month. Secretaries will therefore take note of the dates and get their material in at a time to enable it to be forwarded in advance of that date. Once more the editor for Utah is appealing to the officers of each component society to coöperate in giving their section of the state representation in the monthly reports of society activities. Let us make the Utah section a *real* section.

* * *

Plans for the postgraduate session of the Utah State Medical Association, as announced by Chairman Louis Viko, constitute the chief point of medical interest in the immediate future.

As yet the program is not definitely scheduled, insofar as speakers are concerned, but plans call for a four-day session, covering September 17, 18, 19, and 20.

The program will be held in the various local hospitals, rotating daily, and will consist of a series of clinics and lectures, particularly stressing diagnosis and treatment, with the entire program covering one hospital daily so as to avoid confusion and the changing from one institution to another, thus conserving time.

It is the desire and hope of the committee in charge that this session will be one of benefit to all those attending and a means of bringing them in touch with the later advances in the subjects discussed.

By the time set for the meeting the summer will be gone and a more active interest in such a course of informative instruction may well be expected. It is hoped that the members of the state association will give the meeting their whole-hearted interest and support.

UTAH MEDICAL ASSOCIATION—THIRTY-FIFTH ANNUAL SESSION JULY 1929

Transactions of the House of Delegates

Place of Meeting.—Memorial House, Memory Grove, Canyon Road, Salt Lake City.

First meeting, July 1, Dr. William D. Donohar, president, presiding.

Roll call of House of Delegates by Secretary M. M. Critchlow showed a quorum present.

Sol G. Kahn moved, duly seconded, that inasmuch as minutes of the 1928 session were printed in full in CALIFORNIA AND WESTERN MEDICINE, that the reading thereof be dispensed with. Unanimously carried.

President Donohar announced that first order of business would be reports of officers and committees. He stated that, inasmuch as all the activities of the Association were included in the reports of the secretary and the treasurer, he would not make a formal written report.

* * *

Report of the Secretary.—During the past year the Association has been served by the following officers who were elected in Ogden on June 30, 1928:

William D. Donohar, president; H. P. Kirtley, president-elect; M. M. Critchlow, secretary; E. D.

LeCompte, treasurer; E. R. Dumke, first vice-president; J. W. Aird, second vice-president; R. A. Pearse, third vice-president.

Councilors—J. R. Morrell, first district; F. A. Goeltz, second district; C. E. McDermid, third district; J. U. Giesy, associate editor.

On that date there were 378 members; at present there are 354, represented by counties as follows:

Salt Lake County.....	228
Cache County	17
Weber County	46
Utah County	33
Central Utah	17
Box Elder County.....	8
Uintah County	5

Carbon County, which had a membership of fourteen, is suspended as no dues have been received from that county.

At the 1928 session a new Constitution and By-laws were adopted by the House of Delegates. These have been printed and copies have been distributed to every member in the Association.

On November 10, 1928, a new component society was organized at Richfield by the Council. This society draws chiefly from the men in Sanpete and Sevier counties. T. R. Gledhill was elected president and H. Asa Dewey was elected secretary. The society has flourished, there now being seventeen members.

During the year there were two joint meetings of the Salt Lake and Weber County societies. This enabled the members of the societies to become better acquainted with each other, and the meetings were very enjoyable. It is hoped that other societies will follow this example, thereby promoting good fellowship throughout the state.

M. M. CRITCHLOW, *Secretary*.

✓ ✓ ✓

Report of the Treasurer.—For the fiscal year ending June 30, 1929.

Receipts

Cash in National Copper Bank checking account on July 1, 1928.....	\$1,991.46
Dues of members, received from the component county medical societies:	
Salt Lake County Medical Society	\$842.00
Box Elder County Medical Society	32.00
Cache Valley Medical Society	68.00
Carbon County Medical Society	5.00
Central Utah Medical Society	68.00
Uintah County Medical Society	20.00
Utah County Medical Society	142.00
Weber County Medical Society	195.00
Interest on bonds of the Harlow Brooks Fund—coupons	240.00
Total receipts	\$3,603.46

Disbursements

Expenses incident to the thirty-fourth annual meeting, June 29 and 30, 1928—entertainment and expenses of guests, hotel bills, etc.	\$238.35
Printing, badges, rental of film, etc.	185.69
Subscriptions to California and Western Medicine at \$2 per member.....	750.00
Office of the secretary:	
Salary	250.00
Allowance for an amanuensis at \$10 per month.....	123.33
Office of the treasurer:	
Salary at \$25 per year.....	25.00
Fidelity bond of treasurer, yearly premium.....	10.00
Office of delegate to American Medical Association:	
Printing, binding, stationery, etc.	253.23
Miscellaneous	135.00
Total disbursements	1,970.60
Balance of receipts over disbursements.....	\$1,632.86

Harlow Brooks Fund

I also carry for the Association four-thousand-dollar Utah Power and Light Company debenture bonds (6 per cent) series due May 1, 1922, bearing interest of \$240 per year.

Savings Account

Total of savings account No. 18973 in National Copper Bank, June 30, 1929.....\$397.43

EDWARD D. LeCOMPTE, *Treasurer.*

✓ ✓ ✓

Doctor Critchlow reported that dues from Carbon County Society had just been received. He read the by-law to the effect that where dues are not received thirty days before the annual meeting, members are automatically suspended from the Association.

President Donohoe: There seems to be nothing in the program stating when the Credentials Committee shall report, therefore the Committee on Credentials can report on the matter of Carbon County reinstatement later.

✓ ✓ ✓

Report of Councilor From Second District.—F. A. Goeltz: Everything quiet. The Salt Lake County Society is getting along beautifully.

Report of Councilor From Third District.—C. E. McDermid: In the secretary's report was included the report of formation of society in southern Utah. No constructive meeting of the Carbon County Society has been held this year.

✓ ✓ ✓

Report of Committee on Scientific Work.—This committee has been working since October 1928 to develop the program as it appears today. The committee has been composed of M. M. Critchlow, chairman, three years; G. G. Richards, two years; and F. A. Goeltz, one year.

The time of the meeting was chosen July 1, 2, and 3, with the thought that eminent men on their way to the American Medical Association in Portland on July 8 could be induced to stop over in Salt Lake City.

Very many meetings were held and the following men were obtained to address the Association:

Donald C. Balfour, Rochester, Minnesota.
Russell L. Cecil, New York City, New York.
L. L. Daines, Salt Lake City.
John W. Duncan, Omaha, Nebraska.
Temple Fay, Philadelphia, Pennsylvania.
Norman M. Keith, Rochester, Minnesota.
Charles McMartin, Omaha, Nebraska.
Glenn E. Myers, Compton, California.
Eugene P. Vendergrass, Philadelphia, Pennsylvania.
F. W. Schultz, Minneapolis, Minnesota.
W. S. Thayer, Baltimore, Maryland.
Karl R. Werndorff, Council Bluffs, Iowa.

It was impossible to get a man to deliver a public address, so this has of necessity been omitted from the program.

On June 29 Doctor Schultz wired that because of death in his family he was unable to come to Salt Lake City. He sent his manuscript on, which will be read by Dr. B. E. Bonar.

M. M. CRITCHLOW, *Chairman.*

✓ ✓ ✓

Report of Committee on Public Policy and Legislation.—Your committee was active during the session of the legislature, taking a keen interest in all proposed legislation affecting public health and the medical profession.

The committee supported legislation for the establishment of an institution for the feeble-minded.

Our most earnest efforts were expended to defeat an administrative measure which had as its aim to reduce the *personnel of the State Industrial Commission to one commissioner*, giving to one man autocratic powers which we felt were inimical to both the worker and the medical profession. We are happy to

state that as a result of our efforts the bill died in the committee.

Your committee endorsed a bill introduced in the National Congress perpetuating the *Child Welfare and Maternity Welfare* of the Shepard-Towner Act.

Your committee has also been endeavoring to have the Department of Registration reduce the *annual registration fee* of the medical profession and have secured an admission of willingness from the present director of registration to do so if enough sentiment can be secured from the medical profession protesting the present fee. We wish to urge every member of the Association to write or personally call upon the director of registration protesting the present fee and demanding that it be reduced to \$2 or whatever amount the Association shall agree upon.

We have also been interested in the matter of making a *state-wide survey of all contract and welfare association work* being done by the profession to ascertain at what price for various services medical and surgical work is being done. Our preliminary investigations show that considerable work is being done in coal camps, welfare association groups, etc., for as low a price as thirty-five cents an office consultation. The ultimate object of the survey is to reveal the existing conditions to the medical association with the object in view that all services furnished shall be paid for at a rate for which the minimum fee allowed by the State Industrial Commission shall serve as a basis. For, if this is not done, it is highly probable that the insurance carriers of Workmen's Compensation Insurance will demand that they be accorded the same rates that corporations, welfare associations, and coal mine medical contract associations, are already enjoying.

The State Industrial Commissioners cannot understand why the State Insurance Fund or the insurance carriers should pay a much higher rate for medical services than the corporations that are self-insurers and hire and pay doctors on a salary or contract basis and secure the medical attention for a fraction of the State Industrial Commission minimum medical fee. The insurance carriers feel that they also should be allowed this same privilege of hiring medical attention and putting these men on a salary basis.

This issue is rapidly coming to the front and must be dealt with by this Association sooner or later. We feel that if a survey of the work of this nature is made the Association will be able to better cope with the problem. Obviously we would appreciate the help of the men doing this contract work to secure our data in making this survey.

We await your instructions in these matters.

A. C. CALLISTER, *Chairman.*

✓ ✓ ✓

Report of Committee on Publication.—During the fiscal year the work of the Publication Committee has covered three lines of activity as follows:

First: The publication of the minutes of the last State Association meeting, which were printed in the September 1928 number of CALIFORNIA AND WESTERN MEDICINE. Delay in printing of this report was caused by the fact that the sources reporting the meeting failed to place the finished report in the hands of the chairman in time for publication at an earlier date.

Second: A monthly report of medical news, embracing official news of the State Association, personal notes covering obituaries, etc., and society news reports from the component units of the State Association.

Third: The submission to CALIFORNIA AND WESTERN MEDICINE of scientific papers for admission to its columns.

Under this heading it should be noted that papers furnished by Dr. Isidore Cohen of New Orleans, Louisiana, were not printed owing to the fact that their prior publication elsewhere precluded their acceptance by CALIFORNIA AND WESTERN MEDICINE. These papers were, therefore, returned to Doctor Cohen with

an explanatory letter from the editor of CALIFORNIA AND WESTERN MEDICINE.

It is earnestly suggested by the chairman that the officers of all component local societies make a sincere endeavor to see that the reports of their meetings are forwarded by the secretaries to the associate editor for Utah for publication not later than the tenth of each month. In this way the Utah department of CALIFORNIA AND WESTERN MEDICINE can be built up to a point where it will be a complete reflection of the medical activities of the state. These reports may be brief, but should be sent in regularly to insure their publication. Such communications should be addressed to Dr. J. U. Giesy, 701 Medical Arts Building, Salt Lake City, Utah. It is our deepest desire to have the Utah department carry a full and complete account of all the component society meetings. We therefore ask your coöperation toward bringing such a result about.

J. U. GIESY, *Chairman.*

Report of Postgraduate Committee.—This committee was appointed quite late in the year and, after consulting with the officers of the society, it decided that it was too late to conduct a postgraduate session last summer. (Read by secretary.)

B. I. BURNS.

Report of Committee on Public Health.—Your committee on Public Health met at the Alta Club, Salt Lake City, March 14, 1929. There were present Ezra C. Rich, chairman; R. S. Allison and H. G. Merrill.

There was a general discussion of the medical bills before Congress, and after due consideration the committee was unanimous in recommending to the Council the endorsement of the Newton Bill.

EZRA C. RICH, *Chairman.*

Report of Committee on Medical Economics.—Doctor Goeltz reported that Doctor Beatty, chairman of Committee on Medical Economics, reported to him that he had searched the records in the state of Utah for indigent doctors and there were none, therefore no need for a report.

Report of Medical Education and Hospitals.—President Donohue reported that the Committee on Medical Education and Hospitals had not made a report.

Report of Committee on Necrology.—The Committee on Necrology desires to make the following report for the fiscal year:

Although death has dealt more kindly with the personnel of the Utah State Medical Association during the past twelve months than in several preceding years, it is our regrettable function to note the death on May 27, 1929, of Dr. Harry R. Welch.

Doctor Welch died in Salt Lake City after a lingering illness beginning in February last, from complications resulting from mastoiditis. He was born in Nelsonville, Ohio, in 1878, and was graduated in medicine in 1905. After practicing his profession in the vicinity of Nelsonville until 1912, he came to Utah in that year and has practiced his profession in Salt Lake City since. He was a member of the Salt Lake County Medical Society, the Utah State Medical Association, and the American Medical Association.

As regards the death of Doctor Baash of Castle Gate, Utah, which occurred in the year preceding the one for which this report is made, we regret that we have been unable to obtain any data of a personal nature from which to draft an obituary notice. Correspondence addressed to sources from which we hoped such information might be gained has been ignored. For this reason no formal report can be made.

J. U. GIESY, *Chairman.*

Report of Committee on Medical Defense.—No called formal meetings of the Medical Defense Committee have been held, but the chairman has conferred

informally with various members of the committee as occasion arose.

Case 1. During the past year, one suit has been successfully brought against a member of the society. This suit was prosecuted in Salt Lake County. Briefly, the facts in the case were as follows:

A nose and throat specialist of many years' experience was consulted by a man complaining of deafness, who believed that wax in the ear was responsible for it. Removal of the wax did not improve the condition, and the attending physician, desiring to determine the underlying cause, inflated the eustachian tube. This produced no relief, it was claimed. Examination on occasion of first call showed congestion of the drum head and middle ear catarrh. Several subsequent calls were made by the patient, with no great change in the deafness.

Patient then ceased visits. Six months later patient again presented himself to the doctor, at this time alleging that his hearing had been suddenly impaired at the time of eustachian catheterization, that he had been deaf since that time, and claiming that inflation of eustachian tube had caused the deafness.

At this time the doctor called another specialist to examine the ear. The latter's findings at this time corroborated the original observations of the first mentioned specialist. Investigation by an agent of the insurance company carrying the liability insurance revealed that the patient had been deaf for years before consulting the doctor. At the trial these facts were brought out, and at least two well-known aurists testified that it was impossible to produce the deafness in the manner alleged by the patient and, further, that the treatment given was proper, nothing which should have been done under the conditions given was omitted, and nothing which was done was improper. Despite these facts and the fact that no medical testimony was offered by the plaintiff to substantiate his contention, the trial judge refused to "nonsuit" the case, but permitted it to go to the jury, which returned a verdict against the doctor for \$2000. It is the unanimous opinion of the committee and of every specialist they have interviewed that this was a rank injustice to the doctor. Several competent lawyers have informed your chairman that, in their opinion, the judge should have ruled "no cause for action."

Case 2. A suit brought against a member of the society for alleged malpractice in amputating a forearm, after competent consultation, was nonsuited.

Case 3. A suit for alleged improper treatment of a fracture case is pending.

Case 4. A suit against two physicians jointly is pending. In this case a member of the Salt Lake County Medical Society who operated with a member of Utah County Medical Society on an acute purulent infection of the female pelvis left the after-care to the latter. Several complications developed. The patient's relatives became dissatisfied and discharged the doctor, calling in another member of the Utah County Medical Society, this latter procedure being done in a manner not in harmony with the code of ethics of the American Medical Association. Whether or not the last mentioned doctor's attitude or remarks, or both, caused or contributed to the filing of suit, the committee has been unable to determine. It has made several attempts to have the last mentioned doctor meet with them, but to date has been unsuccessful.

Case 5. A suit is pending against a member of Utah County Medical Society for alleged injury resulting from high voltage current electrical shock (not an x-ray reaction) from x-ray transformer.

Case 6. At least two other suits are pending in the southern part of the state, where there is no county society, but as the carrier is a company not maintaining offices in Utah, full details are not available.

Case 7. A case against a doctor associated with one of the clinics in Salt Lake City in which a verdict was rendered for the plaintiff in the trial court for \$8000 for alleged malpractice was sustained by the State Supreme Court. It is the opinion of the com-

mittee and of all surgeons they have consulted that this verdict was secured in the lower court because of the crass ignorance or malicious false testimony of a member of the Salt Lake County Medical Society. The committee cannot record too strongly its criticism of physicians giving testimony of this sort.

It recommends that the board of censors of local societies, or where there is not a board of censors, the secretary of the local society prefer charges against any member of it who is guilty of such practice.

The committee conferred with insurance carriers in several instances of threatened suit.

The committee has observed that doctors are usually reluctant to testify against a fellow physician after the details of cases are explained to them and they are able to view the complete facts.

It is urged that all doctors be very guarded in their comments on cases in which the end-result is seemingly unsatisfactory, for it is the experience of the committee that in most cases where unwarranted criticism of other physicians is made it is due to incomplete knowledge of the attendant circumstances.

The committee recommends that any member who is sued or threatened with suit, immediately inform the chairman of his appropriate county committee and of the State Medical Defense Committee, giving full details; and that any member who is approached with a view to securing professional testimony which might be made the basis of a malpractice suit against a doctor, refrain temporarily from any action contributing to the filing of a suit, and communicate with the chairman of his appropriate county committee; or, if none exists, with the chairman of the state committee in order that he may have access to all facts before forming (and expressing) any opinion.

The chairman desires to thank the members of his committee for their complete coöperation at all times, and the chairman and members of the Salt Lake County Medico-Legal Committee for special help.

JAMES P. KERBY, *Chairman*.

President Donohue: The first suit reported is one of the very regrettable and lamentable things that have happened in Utah medicine. Lamentable for many, many reasons. In this particular case the doctor was one of the most thoroughly capable and careful men we have doing specialty work; and, in addition, testimony was given by a reliable doctor to substantiate the treatments. Also testimony was given by a very competent witness that four or five years previous he had examined the hearing of this man when the man had made application for railroad position and he had been turned down on account of his hearing. In talking with two attorneys regarding this case, they said our men talked too much—too much comment on the end-result of cases.

New Business.—Secretary read the following petition:

Having perfected an organization complying with all the requirements for a woman's auxiliary to the State Medical Association,

We hereby petition your recognition of our organization as the *Woman's Auxiliary to the Utah State Medical Association*.

MRS. C. N. RAY,
President Auxiliary of Salt Lake County Medical Society.

MRS. E. S. POMEROY,
Recording Secretary.

Doctor Callister: I move we grant them the privilege they desire.

Doctor Critchlow: I should like to add to the motion giving the president authority to appoint a committee of three members from the Utah State Medical Association to meet with the auxiliary organization and advise them.

Motion with amendment accepted and seconded, and voted unanimously.

Doctor LeCompte: In the constitution, Chapter 6, Section 10, the statement is made that salaries of all

employees of the Association shall be fixed by the Council. These gentlemen in executive session have left this to the House of Delegates.

Doctor Goeltz: I move that this matter be referred back to the Council. Seconded, and carried unanimously.

Report of Reference Committee.—We recommend the adoption of the report of the secretary, and recommend that Carbon County be accepted back into the Association.

We recommend the adoption of the report of the treasurer and recommend that interest on the Harlow Brooks Fund revert back to that fund.

We recommend the adoption of the oral report of councilors of second and third districts.

We recommend the adoption of the report of the Scientific Committee with commendations for this splendid meeting.

We recommend the adoption of the report of the Committee on Publications.

We recommend the adoption of the report of the Committee on Postgraduate Work and also recommend that a postgraduate course be given this year, as there was no postgraduate work given in 1928.

We recommend the adoption of the report of the Committee on Public Policy and Legislation, with the further recommendation that that part suggesting a state-wide survey of fees charged and paid be referred to the Council with a strong recommendation that some sort of survey be conducted this year.

We recommend the adoption of the report of the Committee on Public Health.

We recommend the adoption of the report of the Committee on Medical Economics.

We recommend adoption of the report of the Committee on Necrology.

We recommend the adoption of the report of the Committee on Medical Defense and recommend that this report be printed in full and a copy thereof be sent to each member of the Utah State Medical Association—that Secretary Critchlow be authorized to send this out soon.

F. A. GOELTZ, *Chairman*.

Doctor Goeltz moved the adoption of his report just read, stating that the balance of the report would be given at the session to be held next day. Motion seconded and carried unanimously.

Second Meeting, July 2.—Minutes of July 1 meeting read and approved as read.

Vice-president Dumke stated that it was the pleasure of the House of Delegates to have present Dr. W. S. Thayer, president of the American Medical Association, and professor emeritus of medicine, Johns Hopkins University School of Medicine.

Informal address of Dr. W. S. Thayer, President, American Medical Association:

"The few words I have to say can hardly be called an address, but I do wish to express my gratification at being here with you, and of conveying to you greetings of the American Medical Association. During the two years I have been privileged to be associated with the central authorities in Chicago I have found things extremely interesting. Always from the beginning I have been converted to the fact that it was a duty to keep in touch with the national and local associations. I have always felt that rather strongly, especially as I served some years on the judicial council, and then these last two years have been extremely interesting to me to see the workings of the central body—and very stimulating. It is awfully easy in an association of between 95,000 and 100,000 members (I think there are more now)—it is awfully easy to become discontented and disgruntled. We can't always agree with everything that is done. But the central authorities listen to the ever-growing complaints about the central ring that manages everything and forces its desires on the rest of the world. It has been awfully interesting to me to be thrown with them and see how fine they are and how earnestly they are really working for the good of the

medical profession in every way they can. It has been very interesting to me to see the meetings of the board of trustees—the body that really does carry heavy responsibilities, and meets real big issues with modest deliberation and care. Those men are really doing their level best and working awfully hard, and it is a very difficult problem to meet the various questions that arise.

"There are one or two things that interest me greatly—one is the promulgation of the *Index Medicus*, the index catalogue—the monthly index of medicine. This catalogue is a perfectly unique book—nothing like it anywhere in the world. It is referred to by everybody in the world of medicine; it is the one standard book of medical reference. I don't believe that in Washington there is any one thing as valuable as the Index Catalogue in the Surgeon-General's library. If you go abroad and ask for a book, the attendant turns instantly to the Index Catalogue to see what it is. I have seen a reference written in French to a Russian—have seen the attendant look at it and go to the Index Journal and then write back and tell them what it was. That has been a wonderful thing, and something must be done to perpetuate it. It looks now as if at the end of the present series it might come to an end for lack of funds. The physicians of the United States will have to get together and see that it is put over. The Index Catalogue carries every month the name and author of practically every article of medicine that was written anywhere in the world. Years ago it was practically complete, but as years have gone by and publications have increased so terrifically in volume, it has become less and less complete, and money to keep it up has dwindled until it looks serious for the Index Catalogue unless something is done by the physicians—some concerted action that will finance this most wonderful catalogue.

In our quarterly *Medical Review* we have taken over that index. Of course, now it is nothing like it was in 1886-1887, when it contained every article of importance that appeared in the whole world. Medical literature has gotten ahead of us. The matter has been brought before the board of trustees and they have agreed that if the money can be raised we will take up the flag and, through the American Medical Association, bring that index back to the ideal of completeness that existed in the beginning. The funds, however, must be raised outside of the profession. We cannot accept money from big organizations, it wouldn't do. We can't put ourselves under obligation to anybody, but we can get somebody to give us a million or a million and a half, and if we can, we can make our monthly index a completed thing.

"The other important thing that interests me greatly is to establish a greater museum in Chicago—make it the center of medical interest.

"I am going out of my term this year with the feeling that organized medicine, as we refer to it, is a fine thing and in the main it is being carried out awfully well and by a set of men you can pick out in any association. . . . Those men who are carrying on our work in Chicago are fine fellows and they are doing their level best for the good of the medical profession. I take my hat off to men like Olin West. We ought to work for our Association in every way, and with a feeling of the greatest admiration, affection, and pride.

"I thank you."

Report of Council.—The Council, through frequent meetings during the year, has kept in touch with the affairs of the Association.

Visits were made to the Utah County, Weber County, and Salt Lake County societies. A visit was also arranged with the Uintah County Society, which, however, was called off by the officers of that society at the last minute.

A meeting was held at Richfield which the physicians of Sanpete and Sevier counties who had pre-

viously held membership in various county societies, or had no membership at all, and a joint society known as Central Utah Medical Society was organized. The members were enthusiastic and an active organization has been maintained.

Steps were taken early in the year to organize a society in the southwestern counties of the state, but considerable opposition was encountered. However, recently it seemed that it might be possible to effect such an organization and a meeting was called at Cedar City, but was postponed at the request of some of the men who were not able to be present. It will probably be possible in the near future to complete this work, which will make it possible for the men in every part of the state to maintain membership in societies within easy access, which ought to result in an increased activity and a better State Association.

A joint meeting of the Council and the Public Health Committee of the State Association discussed the Newton Bill, which was before the last session of Congress, and passed a resolution approving it and urging its adoption.

JOSEPH R. MORRELL, *Chairman.*

♦ ♦ ♦

Oral reports were given in brief by the Committees on Banquet (M. M. Nielson, chairman) and on Entertainment (Sol G. Kahn).

Doctor Goeltz reported that the Committee on Reference had approved the report of the Council, and moved its adoption. Seconded by Doctor Benedict, and carried unanimously.

Moved by Doctor Kirtley that the 1930 meeting of the Utah State Medical Association be held at Salt Lake City, the time and place to be designated by the Council.

Motion seconded and carried unanimously.

Doctor Kerby: I should like to see the House of Delegates take some action that will enable constituent societies to, in some way, handle members who are guilty of unethical conduct. I have in mind the willful, malicious, or ignorant giving of testimony in cases where medical knowledge or medical opinion is involved. We all know that in Salt Lake—and in other counties—there is a small amount of so-called medical testimony that is not true and in many cases it is very harmful; and while there is something in the constitution of constituent societies covering these matters, I believe we should go on record with radical disciplinary methods against those who are guilty of these practices. I should like to ask the secretary if it would be in order to make a motion to that effect or if it would be encroaching upon the work of the individual societies.

Discussion followed.

Doctor Kerby: I withdraw the motion. I now move that the secretaries of the component county societies be directed to carry out the provisions of Section 7, Chapter 11, of the Constitution and By-laws of the Utah State Medical Association, 1929. Motion seconded and carried unanimously.

Secretary Critchlow brought up the matter of dues, that \$4 is not enough to get along on when post-graduate course is given. He moved that the dues of the Utah State Medical Association be raised to \$5. Discussion. Seconded by William L. Rich, and carried unanimously.

Election of Officers:

President-Elect.—F. A. Goeltz nominated William L. Rich as president-elect. Seconded.

Moved by Doctor Benedict, duly seconded, that nominations close and that rules be suspended and secretary cast the vote of the House of Delegates for Doctor Rich as president-elect. This was done and Doctor Rich was elected president-elect.

Speech asked for and Doctor Rich responded with a few words of appreciation.

First Vice-President.—Joseph R. Morrell nominated William H. Budge of Ogden. Seconded.

Doctor Kerby moved that the rules be suspended and that nominations close; that Dr. Critchlow cast

the vote of the House of Delegates for Doctor Budge as first vice-president. This was done and Dr. William H. Budge of Ogden was elected first vice-president.

Second Vice-President.—Doctor Kerby nominated Dr. David Gottfredson of Richfield as second vice-president. Seconded.

Doctor LeCompte moved that nominations close and that the secretary be instructed to cast the vote of the House for Doctor Gottfredson as second vice-president. Seconded. This was done and Doctor Gottfredson was declared elected as second vice-president.

Third Vice-President.—Dr. William L. Rich nominated J. W. Hayward of Logan. Seconded.

Doctor Goeltz moved that nominations close and that the secretary cast the vote of the House of Delegates for Doctor Hayward as third vice-president. Seconded. This was done and Doctor Hayward was declared elected as third vice-president.

Treasurer.—Doctor Kahn nominated E. D. LeCompte, the present treasurer. Seconded.

Doctor Kirtley moved that nominations close and that the rules be suspended and secretary cast the vote of the House of Delegates for Doctor LeCompte as treasurer. This was done and Doctor LeCompte was declared elected as treasurer for the year 1929-30.

Councilor First District.—Doctor Kerby nominated E. R. Dumke. Seconded by T. F. H. Morton. Moved that nominations close; that the rules be suspended, and that secretary cast the vote of the assembly for Doctor Dumke as councilor of the First District. Seconded and carried unanimously. Thereupon Doctor Dumke was declared councilor for First District.

The secretary announced that the following officers would serve the Association for the coming year:

President, Howard P. Kirtley, Salt Lake.

President-elect, William L. Rich, Salt Lake.

First Vice-president, William H. Budge, Ogden.

Second Vice-president, David Gottfredson, Richfield.

Third Vice-president, J. W. Hayward, Logan.

Councilor First District (term expires 1932), E. R. Dumke, Ogden.

Councilor Second District (term expires 1930), F. A. Goeltz, Salt Lake.

Councilor Third District (term expires 1931), C. E. McDermid, Castle Gate.

Secretary (term expires 1931), M. M. Critchlow, Salt Lake City.

Treasurer, Edward D. LeCompte, Salt Lake City.

Delegate to American Medical Association (term expires 1930) Sol G. Kahn, Salt Lake City.

Alternate Delegate to American Medical Association, (term expires 1930), E. M. Neher, Salt Lake City.

Associate Editor, J. U. Giesy, Salt Lake City.

Meeting adjourned *sine die*.

WILLIAM D. DONOHER, *President*.
M. M. CRITCHLOW, *Secretary*.

UTAH NEWS

Utah Woman Doctor Observes Ninetieth Birthday. Thursday marked the ninetieth birthday anniversary of Dr. Romania B. Penrose, one of Utah's first women surgeons, and widow of Charles W. Penrose, late councilor in the first presidency of the L. D. S. church.

Doctor Penrose was graduated from the Women's Medical College in Philadelphia in 1876, serving an internship in Boston and New York hospitals. She was later associated with the old Deseret Hospital, first institution of its kind in Utah. She served as superintendent and then took a postgraduate medical course to specialize in diseases of the eye, ear, nose, and throat. She practiced for nearly thirty-five years.

Doctor Penrose still maintains an active interest in world affairs, although her eyesight almost has failed. She resides at 1145 Ninth East Street.

AMERICAN MEDICAL ASSOCIATION

Abstract of the Proceedings of the House of Delegates at the Portland Session of the American Medical Association July 8 to 12, 1929

The eightieth annual session of the American Medical Association was held in Portland, Oregon, July 8 to 12, 1929.

The minutes of the seventy-ninth annual session were approved as printed. The annual addresses of the speaker, the president, and the president-elect were heard by the House and referred to the Reference Committee on Reports of Officers. These addresses appeared in *The Journal of the American Medical Association* for July 20, 1929. . . .

That part of the report of the Board of Trustees dealing with the need for a new building to house the activities of the Association was referred to a special committee appointed by the speaker on authorization of the House.

History of the American Medical Association.—Dr. William Allen Pusey, delegate from Illinois, submitted a resolution providing for the appointment of a committee by the Board of Trustees to direct the preparation and publication of a comprehensive history of the Association. This resolution, having been referred to the Board of Trustees, was recommended for adoption and the recommendation was approved by the House of Delegates.

Practice by Corporations and Other Groups and the Relationship of Physicians Thereto.—Dr. William Allen Pusey, delegate from Illinois, presented a resolution providing that the Judicial Council of the Association be asked to present to the House of Delegates at the annual meeting in 1930 a comprehensive statement for the guidance of the American Medical Association concerning the practice of medicine by corporations, by clinics, by philanthropic organizations, by industrial organizations, by demonstrations and by similar organizations, and concerning the relationship of physicians thereto.

This resolution was considered by the House of Delegates in executive session. The resolution was adopted.

Home for Indigent Physicians.—Dr. J. Norman Henry of Pennsylvania submitted the report of a special committee appointed to study the need for the establishment of a home for needy physicians. This report was referred to the Board of Trustees and was recommended for adoption. After discussion by several delegates, the recommendations of the Board of Trustees were approved, and the report of the committee adopted. The report of the committee advised against the establishment by the Association of a home or homes for indigent physicians, and expressed the opinion that "it is not, nor should it be, a function of the American Medical Association at this time to undertake the care of indigent physicians in any way."

Lists of Physicians in Classified Telephone Directories. Dr. G. Henry Mundt, delegate from Illinois, submitted a resolution providing that when publishers of classified telephone directories impose a charge for listing the names of ethical physicians in such directories, component county medical societies of the American Medical Association be advised to discontinue such listings in classified directories. The Reference Committee on Legislation and Public Relations, to which this resolution was referred, recommended the adoption of the resolution, and the recommendation of the Reference Committee was approved by the House of Delegates.

Dangers of Illuminating Gases and Gases Used in Electrical Refrigeration.—Dr. J. W. Van Derslice, delegate from Illinois, submitted a resolution providing for the appointment by the Board of Trustees of a committee to study and report on the menaces to health and to life from carbon monoxid gas as a constituent of illuminating gas and as a by-product of the combustion of gasoline in automobiles; on the dangers of gases used in electrical refrigeration, and

on steps necessary to be taken for the protection of the public. This resolution, referred to the Reference Committee on Hygiene and Public Health, was adopted by the House.

Advertising Hospitals.—Dr. Burt R. Shurly, delegate from the Section on Laryngology, Otology, and Rhinology, presented a resolution providing that inasmuch as some hospitals, municipal and otherwise, have advertised in the daily press "and have given to the public stories of their special excellence and efficiency as compared with other hospitals," such advertisements be collected by the Council on Medical Education and Hospitals and that the "question of hospital advertising be given due consideration and reported to the House of Delegates at the next annual meeting and the rating of hospitals be affected according to the unethical advertising published."

Needs of Small Hospitals.—Dr. T. O. Freeman, delegate from Illinois, submitted resolutions providing that the Council on Medical Education and Hospitals be ready to make a survey of the needs of smaller hospitals, to render all possible assistance to such institutions desirous of improving their system of records and their services to the public, and to offer its assistance to state registration departments to the end that such departments may secure such aid as they desire in connection with their classification of accredited hospitals. The Reference Committee on Medical Education, to which this resolution was referred, reported to the House of Delegates that, in its opinion, the investigation begun several years ago and now being carried on by the Council on Medical Education and Hospitals would fulfill all the objects of the resolution, and that the Reference Committee believed that the Council stands ready to give all possible assistance to small hospitals in solving their problems. The Reference Committee recommended that the resolution be not adopted, and this recommendation was approved by the House of Delegates.

Direction of Red Cross Nurses by Cultists.—Dr. J. C. Litzenberg, delegate from Minnesota, submitted a resolution adopted by the Minnesota State Medical Association, disapproving the policy of the American Red Cross in officially authorizing Red Cross nurses to nurse patients under the care of cultists. The Reference Committee on Legislation and Public Relations recommended that the American Medical Association disapprove any change in policy by the American Red Cross, whereby the nurses of that organization would be available for service to patients under the care of cultists, and that the secretary of the Association communicate with the proper officials of the American Red Cross and advise that organization of the attitude of the House of Delegates. The recommendations of the Reference Committee were adopted.

New Building.—The special committee, to which that part of the report of the Board of Trustees dealing with the need for a new building for housing the activities of the Association was referred, expressed its conviction that it is desirable for the Association to have a building "that would be visible evidence of the dignity, importance, and power of the Association," and recommended that it should be left to the Board of Trustees to perfect plans for providing the building.

This committee also expressed the opinion that the subscription price of *The Journal* is now relatively greatly below the price of other journals that approximate it in extent and quality, and suggested that the Board of Trustees should consider the question of increasing the subscription of *The Journal*.

A third recommendation of the committee was to the effect that it would be appropriate for the Board of Trustees, in a building program, to solicit memorial contributions, both large and small, from members of the Association. The committee expressed its conviction that as the Association shows increased evidence of strength and permanence it will gradually

become the recipient of an increasing number of memorial contributions.

The report of the special committee was adopted by the House of Delegates.

Later, in the proceedings, Dr. William Allen Pusey, delegate from Illinois, introduced a proposed amendment to the By-laws, providing that the subscription price of *The Journal* shall not exceed \$8. This proposed amendment was adopted by the House, and the Board of Trustees is thereby authorized to increase the subscription price of *The Journal* to a sum not in excess of \$8 a year.

Periods of Practical Experience for Medical Students.—Dr. E. J. Goodwin, delegate from Missouri, presented a resolution that had been adopted by the Missouri State Medical Association providing that medical schools be encouraged to arrange for periods of practical experience for students with practitioners of high standing, preferably in rural communities, and that the Council on Medical Education and Hospitals be instructed to consider the plan proposed by the Missouri State Medical Association and, if the plan is found to be feasible and beneficial, the Council be urged to encourage medical schools to "inaugurate suitable methods for providing these vacation periods of practical experience for their students." The Reference Committee on Medical Education reported favorably on this resolution, and it was adopted by the House of Delegates.

Committee on Military Affairs and National Defense.—Dr. H. C. Mallory, delegate from the United States Army, presented a resolution providing for the appointment by the Board of Trustees of a special permanent committee to be known as the Committee on Military Affairs and National Defense, to which shall be referred matters pertaining to national defense and military preparedness. The adoption of this resolution was recommended by the Board of Trustees, and this recommendation was approved by the House of Delegates.

National Defense Act of 1920.—Dr. Holman Taylor, delegate from Texas, introduced a resolution providing that the American Medical Association, through its House of Delegates, go on record as heartily approving the National Defense Act of 1920. The Reference Committee on Legislation and Public Relations reported the resolution favorably, and it was adopted.

Increased Tariff on Surgical Instruments.—Dr. Albert Soiland, delegate from California, submitted a resolution providing that the House of Delegates record its opposition to the passage of a bill providing for increased tariff on surgical instruments, x-ray equipment, vacuum tubes, valve tubes, and scientific glassware. The Board of Trustees recommended the adoption of the resolution, and the House of Delegates approved this recommendation.

Standards of Physical Fitness of Automotive Operators.—Dr. H. C. Macatee, delegate from the District of Columbia, presented a resolution setting out that relatively few accidents occur because of defects of sight and hearing and providing that the House of Delegates "consider the advisability of amending the present standards of physical fitness of automotive operators, adopted by this Association, by the adoption of standards of mental and moral fitness to be recommended for adoption by the several states as a condition for issuing licenses to operate motor vehicles, and that this resolution be referred to a special committee for consideration and report at the next annual session." The Reference Committee on Hygiene and Public Health recommended the adoption of the resolution. On motion of Dr. G. Henry Mundt, delegate from Illinois, the resolution was amended by deleting a statement in the preamble to the effect that relatively few accidents occur because of defects of sight and hearing. The resolution as amended was adopted.

Medical Expert Opinion.—Dr. Tom B. Throckmorton, delegate from the Section on Nervous and Mental

Diseases, submitted the following resolutions, which had been approved by that section.

Whereas, The House of Delegates of the American Medical Association has previously expressed its dissatisfaction with the present status of medical expert opinion evidence and has expressed its approval of the efforts of the American Bar Association and of the various bar and medical societies to correct by remedial legislation and by changes in court procedure the present undesirable features of the introduction of such evidence; and

Whereas, The American Psychiatric Association and the National Crime Commission are devoting much study to the subject of such evidence, particularly as relates to psychiatric matters in criminal cases, with a view to improving procedure; and

Whereas, The Criminal Law Section of the American Bar Association has appointed a committee to collaborate with a committee of the American Psychiatric Association in formulating plans for bringing about a betterment of the present undesirable situation; and

Whereas, Such efforts are of vital interest and importance to the entire medical profession, be it therefore

Resolved, That the House of Delegates of the American Medical Association express its continued interest in the correction of the abuse of medical expert opinion evidence, and that it offer to the American Bar Association, the American Psychiatric Association, and the National Crime Commission, the various state and county medical and bar associations, and such other reputable organizations as are actively pursuing efforts directed toward such correction the assistance and coöperation of the American Medical Association in promoting the passage of appropriate legislation and in bringing about suitable changes in court procedure with reference to such evidence; and be it further

Resolved, That the House of Delegates approves the principle of securing in the case of all capital charges and in the case of as many other criminal charges as the psychiatric facilities of the state will permit an impartial and routine mental examination of the defendant in advance of the trial as a means of obviating the contentious introduction of partisan testimony, and that it approves further the principle of removing as far as possible the question of sanity from the trial itself, reserving the employment of psychiatric data for a post-trial inquiry to determine what treatment is appropriate to the convicted person; and be it further

Resolved, That a copy of this resolution be forwarded to the American Bar Association, the American Psychiatric Association, and the National Crime Commission.

On motion of Doctor Throckmorton, seconded by Dr. A. T. McCormack, delegate from Kentucky, and after discussion by various members of the House, these resolutions were adopted by the House of Delegates.

Resolution From Section on Dermatology and Syphilology.—Dr. F. W. Cregor, delegate from the Section on Dermatology and Syphilology, submitted resolutions providing that treatment for hypertrichosis by the tricho system and by allied systems employing radiation be condemned as highly dangerous to the patient, and "that all cases presenting the effects of this type of treatment and seen by members of the medical profession be reported to the Bureau of Investigation of the American Medical Association." The resolutions were adopted.

Amendment to the Principles of Medical Ethics.—The Judicial Council, in its report to the House of Delegates, recommended that Section 3, Article VI, Chapter II, of the Principles of Medical Ethics be amended by substituting the following:

COMMISSIONS

Section 3. When a patient is referred by one physician to another for consultation or for treatment, whether the physician in charge accompanies the patient or not, it is unethical to give or to receive a

commission by whatever term it may be called or under any guise or pretext whatsoever.

This recommendation of the Judicial Council was adopted by the House of Delegates, and the Principles of Medical Ethics were so amended.

Message From President of Woman's Auxiliary.—Dr. J. H. J. Upham, member of the Board of Trustees, presented a report from the Woman's Auxiliary to the House of Delegates submitted by its president, Mrs. Allen H. Bunce of Atlanta, Georgia, and this message was accepted by the House and made a part of its records.

Election of Officers.—The following officers were elected:

President-elect, William Gerry Morgan, Washington, D. C.

Vice-president, Ernst A. Sommer, Portland, Oregon.
Secretary, Olin West, Chicago.

Treasurer, Austin A. Hayden, Chicago.

Speaker of the House of Delegates, F. C. Warnshuis, Grand Rapids, Michigan.

Vice-speaker of the House of Delegates, Albert E. Bulson, Fort Wayne, Indiana.

Member of the Board of Trustees, D. Chester Brown, Danbury, Connecticut, reelected.

Member of the Board of Trustees, Allen H. Bunce, Atlanta, Georgia, to succeed E. H. Cary, Dallas, Texas.

Place of 1930 Annual Session.—Detroit, Michigan, was selected as the place for holding the next annual session of the American Medical Association in 1930.

The Spread of Truth.—Professions become dignified and useful by the services which they render to humanity. Professions differ from other callings in that the element of commercialism is secondary and the ideal of service is uttermost. The medical profession has become a solace to the suffering because the physician, as a man of science, gives his best in the performance of a high duty. Before life and health all other human values are insignificant.

That life is a failure which sheds no sunshine in the paths of others. That profession fails to reach the dignity and hope of its founders unless humanity becomes its beneficiary.

Of what good would be the discoveries of all the laboratories if they were put to no purpose? Of what use would be insulin or the antitoxins, unless the world learned of their value? Why gatherings of medical men unless it be to acquaint others and to exchange ideas of new health ways discovered, new methods of treatment revealed? The world makes progress only as knowledge and truth becomes a common heritage.

The good which comes to earnest practitioners from a conference with men of their own profession is but a whisper unless their knowledge can be disseminated.

The good to be accomplished in disseminating knowledge through the channels of the press has a double purpose. It gives the lie to the pretensions of the quack and it affords an enlightened hope to the suffering. But the good can be increased manifold by the active coöperation of every physician. Encourage your daily and local press to use the service. Commend those papers which wholeheartedly spread the truth of the achievements of the medical profession. If the days and years of life are to be prolonged for all humanity it can only be done by reaching all classes of people with the health message and the service ideals which have become the standard of that profession.

To aid us spread the truth is to help us ennoble the medical profession itself. There is no room for superstitious cures when the knowledge of science is enthroned in the minds of men.—*The Wisconsin Medical Journal*, August 1929.

MISCELLANY

Items for the News column must be furnished by the twentieth of the preceding month. Under this department are grouped: Comment on Current and Recent Articles in the Journal; News; Medical Economics; Correspondence; Department of Public Health; California Board of Medical Examiners; and Twenty-Five Years Ago. For Book Reviews, see index on the front cover, under Miscellany.

NEWS

Staff Promotions.—Changes of title were given to the following in the University of California Medical School: Dr. H. H. Searls, assistant professor of surgery, to be associate professor; G. E. Hein, assistant professor of medicine, to be associate professor; and R. L. McCalla, assistant clinical professor of medicine, to be assistant professor of medicine.

Class for Travelers.—A class in personal health protection for persons intending to live or travel in the tropics or the Orient will be given during the week of September 23, 1929, in the Pacific Institute of Tropical Medicine in San Francisco. The class will occupy the mornings of one week. Instruction will be in simple nonmedical language and will be strictly practical. The teachers will all be specialists from the Institute staff of the University of California. The subjects covered will include personal hygiene, emergencies of all sorts, toothache, care of children in hot climates, care of the skin and eyes, clothing, sun protection, safe food and drink, protection against mosquitoes and other insects, and everything that goes to make the traveler's health safe. For those expecting to live or travel in the Orient or the tropics, the course will be invaluable. Instruction will be given in the proper care of various symptoms and the avoidance of diseases. Moving pictures and numerous lantern slides will be used for illustration. The fee for the course will be \$10. Registration should be made as early as possible with the director. Address inquiries to Alfred C. Reed, M.D., Hooper Foundation, Second and Parnassus Avenues, San Francisco, California.

Stanford Appointment.—Dr. Allen K. Krause, formerly associate professor of medicine at Johns Hopkins University, who has recently been made director of the Desert Sanatorium and Institute for Research, has been appointed clinical professor of medicine at Stanford University. While Doctor Krause will be located at Tucson, Arizona, he will be in San Francisco at certain times during the year to participate in the teaching at Stanford.

Fellowship in Radiology in the Charity Hospital of New Orleans.—Dr. Amedee Granger, director of the x-ray department of the Charity Hospital, announces that the board of administrators of that institution has established a fellowship in radiology.

The Fellows are members of the house staff, ranking between the interns and the house physicians and surgeons, and at the completion of their year's work will receive a certificate of fellowship and become eligible for the position of assistant radiologist. The hospital is one of the largest in this country and the number and variety of clinical material is abundant, as shown by the fact that more than thirty-five thousand radiographs are made annually.

Radiological Society Meeting.—The next meeting of the Radiological Society of North America will be held at Toronto, December 2 to 6, inclusive. Headquarters at the Royal York Hotel. The scientific program, clinics, scientific and commercial exhibits will be of the highest character and exceedingly interest-

ing and instructive. The program will be interesting to physicians practicing other medical specialties and to those in general practice as well. A cordial invitation is extended to all physicians to attend the Toronto meeting. Secure reservations at once through Dr. W. C. Kruger or Dr. G. R. Reid, 20 College Street, Toronto, Canada. Excellent arrangements have been made to take care of the visiting ladies.

International Clinic Session of the Interstate Postgraduate Medical Association of North America.—The Interstate Postgraduate Medical Association of which Dr. John B. Deaver of Philadelphia is president, and Dr. William B. Peck, Freeport, Illinois, is managing director, announces an international meeting to be held in Detroit, October 21 to 25, inclusive. The list of speakers includes the names of many members of the profession well known in American and European literature. The program starts on Monday, October 21, 1929, and continues for five days. Symposia will be held in otolaryngology, heart and circulatory and nervous diseases, as well as in the other medical and surgical specialties. Any members interested are invited to write to the managing director for copies of the complete program.

Medical Prints.—There is an exhibition of medical prints, which Dr. William J. Kerr, professor of medicine at the University of California Medical School, procured on his recent trip to Europe, in the library of the University of California Medical School, Third and Parnassus avenues, San Francisco. The library is open daily from 9 till 5.

Registration Record.—The number of students registered at the University of California Medical School here is larger this year than ever before in history, according to figures released by Dean Langley Porter.

A total of 271 students is now registered for instruction, which is eight more than the largest previous enrollment of 263 in August 1926. The medical course requires five years of instruction for students who have already reached senior standing in the academic departments at Berkeley or elsewhere. The students are divided as follows: first year, 60; second, 51; third, 54; fourth, 60, and fifth, 46.

Enrollment in any class at the Medical School is limited to sixty. Entering classes for a number of years have reached this total, but never before have the more advanced classes been so close to the maximum.

Gift to School of Nursing.—A legacy of \$40,000 came as a genuine surprise to the School of Nursing of the California Lutheran Hospital on Monday, July 22.

The gift is designated as a perpetual endowment to be administered by the Security First National Trust and Savings Bank of Los Angeles, the income only to be expended annually. Inasmuch as the estate consists of good securities the income for the present will be at least \$2500 annually. Scholarships have a prominent place in the program of use for this endowment, as have also physical-recreational activities.

John Hedberg, the donor, was a single man, 75 years old at his death. He was a ward patient in the California Lutheran Hospital, being operated for acute appendicitis, at Christmas time 1924.

CORRESPONDENCE

Subject of Following Letter: The Higashi Diploma Mill of Los Angeles

San Francisco, California,

August 9, 1929.

Yours of August 6; Re: Diploma Mill

Dr. H. W. Donwell, 23493

K. Higashi, 25646

Frank B. Jaqua, 26512

Rush Meadows, 27909

United States Penitentiary,
Thomas B. White, Warden,
Leavenworth, Kansas.

Dear Sir:

We are greatly indebted to you for your kindness in forwarding us photographs in duplicate, history, etc., of each of the individuals above mentioned, whom we are actively engaged in investigating in connection with an alleged diploma mill in Los Angeles, with K. Higashi as principal, whose quarters were raided by our special agent and Los Angeles police officers; which disclosed two fraudulent diplomas of the University of Illinois Medical School, a metal seal which he had made for the purpose of making an impress of the official seal on various documents and, in addition thereto, correspondence between Donwell and Higashi, telegrams between Jaqua and Higashi, corporation papers of the Asia Coast Company, wherein K. Higashi, Rush Meadows, and J. E. Osborne appear as directors, it appearing from the correspondence that the plot was hatched while all were inmates at Leavenworth and gave great promise until our investigation started some months ago.

Perhaps word of this investigation reached the principals or else they were frightened by the newspaper prominence given the arrest of Hamilton McClarty, charged under the California Diploma Mill Bill with a felony in filing fraudulent credentials in an attempt to gain a license to practice in California.

Although this diploma mill may be "dead" we must keep on the qui vive for others, and presume you have noticed in the press dispatches of August 8 that Chicago is now involved in a diploma mill scandal where forged diplomas of Rush Medical College, Northwestern Medical School, and state licenses are reported to have been promiscuously sold.

Thanking you again for your kind coöperation, believe us

Very truly yours,

C. B. PINKHAM, M. D.

Secretary-Treasurer.

Subject of Following Letter: Fraudulent Stones and Seals for Illegal Diplomas

San Francisco, California,

August 9, 1929.

Re: Diploma Mill

Mr. Albert Carter, Special Agent,
Board of Medical Examiners,
812 Associated Realty Building,
Los Angeles, California.

Dear Mr. Carter:

You are certainly deserving of a great deal of credit for the thorough manner in which you have made your investigation and "mopped up" the Los Angeles diploma mill operated by K. Higashi, which involved the issuing of fraudulent diplomas on the University of Illinois Medical School and threatened to develop into a world-wide conspiracy.

We are uncertain whether from an examination of the fraudulent diploma of the University of Illinois, Higashi had a stone replica made for printing other diplomas or whether this diploma was all done with pen and ink, and we are wondering if there is any possibility of your learning from Higashi whether any concern in Los Angeles made the "stone" so that other diplomas could be printed therefrom.

We would also appreciate your ascertaining the name and address of the firm in Los Angeles that made the fraudulent metal seal of the University of Illinois. There should be some legislation, if there is

none now, on the statute books which would punish a commercial firm which executes an order either for fraudulent diplomas, state licenses or official seals, and we would appreciate your taking the matter up with District Attorney Buron Fitts, who, I am sure, would offer you every possible support in proceeding against any firm which would prostitute its commercial standing by stooping to such an act.

Undoubtedly you read in yesterday's paper of the outfit in Chicago that had cut for them various "stones" or "type set-ups" reproducing the diplomas of Rush, Northwestern University, and others, as well as reproducing state licenses, the article relating that over a thousand medical diplomas and licenses had been sold at approximately \$2000 per copy, the culprit involved having confessed to have thrown all his paraphernalia into the Chicago drainage canal when his plot was discovered. The Illinois Department of Registration investigators report their intention of attempting to recover these from the canal. . . .

Very truly yours,

C. B. PINKHAM, M. D.,

Secretary-Treasurer.

TWENTY-FIVE YEARS AGO*

EXCERPTS FROM OUR STATE MEDICAL JOURNAL

Vol. II, No. 9, September 1904

From some editorial notes:

. . . *Tuberculosis Commission*.—The Royal Commission, which has been investigating the relation between human and bovine tuberculosis for the past three years, has recently made a partial report. The commission finds that animals infected with tuberculosis derived from man exhibit no gross or histological differences in pathology, nor any perceptible variation in clinical effects from those animals inoculated with bovine tuberculosis. This is contra to the theory advanced by Koch and supported by some observers, and is of importance. Its direct bearing on the milk question cannot be gainsaid, and there should be no modification of the existing legislative restrictions in regard to cattle afflicted with tuberculosis; rather they should be increased and more rigidly carried out. . . .

. . . *Serum for Snake Venom*.—Dr. Hideyo Noguchi, who since leaving this country and his work with Professor Flexner has been doing research work in Copenhagen, writes to Dr. Weir Mitchell under date of April 27, giving an outline of his results.

. . . *City Milk Standard*.—A milk supply protected only by a required standard based on chemical analysis, fat percentage, etc., may be not only filthy but also very dangerous. The bacterial content of an average sample is really the only safe indication of the quality of milk; of course, assuming that no preservative has been added. . . .

. . . *Nostrums and Quacks*.—Dr. Oliver T. Osborne, chairman of the Section of Materia Medica, etc., of the American Medical Association, made the subject of his address at the Atlantic City meeting a discussion of nostrums and unlicensed or illegal practitioners. It was an excellent address, and was published in the *Journal of the American Medical Association*, July 2, 1904. That part of it which had to do with nostrums was entirely devoted to the popularly called "patent medicines," and ignored the most dangerous class—the nostrums vended through the physicians of the country—the secret formula "proprietary" preparations. . . .

. . . *The Lane Lectures*.—The Lane lectures at Cooper College were delivered this year by Dr. William H. Welch of Johns Hopkins, on the general subject of infection. . . .

. . . *We Need Your Help*.—The journal is trying its very best to do the right thing by everyone interested and to succeed. . . .

* This column aims to mirror the work and aims of colleagues who bore the brunt of state society work some twenty-five years ago. It is hoped that such presentation will be of interest to both old and recent members.

... Will you not help us as much as you can? Will you not help us by helping those who are helping us? The concerns which advertise with us are good and reliable; they tell the truth about their products, and their preparations are to be depended upon and are reliable to the very best of our knowledge and belief. Please patronize those who help us by advertising worthy goods in our clean pages, and thus endorse the stand which we have taken. Let them feel that you recognize a bond of friendly fellowship in this effort to do the right thing and hold to the decent course. . . .

From the Report of the Tuberculosis Committee of the Medical Society of the State of California:

... 3. That we favor legislation, just so far as it can be of help in combating the disease, but oppose all unscientific, impractical and inhumane measures. We are in favor of:

(a) The rigid enforcement of antisputting ordinances, as applied to public places.

(b) The provision of public spittoons.

(c) Health board notification for the purpose of instruction and disinfection.

(d) State sanatoria for the poor. . . .

... (e) To present to the Governor and State Legislature the matter of the importance of state sanatoria for the treatment of the poor.

F. M. Pottenger, Los Angeles
John C. King, Banning
George L. Cole, Los Angeles
George H. Evans, San Francisco
Edward Von Adelung, Oakland
Committee.

From an article on "Total Laryngectomy for Epithelioma—Employment of the Gluck Phonation Apparatus" by Wallace I. Terry, M.D., San Francisco:

... There are two points about this case which have occurred to me since the operation. In the first place, I should have urged a total laryngectomy on the patient as soon as the microscopical diagnosis was made after the first laryngotomy. By so doing, the chances of ultimate recovery would have been much heightened, and there would have been a cleaner operative field, permitting a complete closure of the wound. Keen obtained primary healing throughout in his case. Second, the suggestion of Crile, of which mention has already been made, to apply cocaine to shock. . . .

the interior of the larynx as a preventive of laryngeal

From an article on "The Advantage of Mules' Operation Over Simple Enucleation" by Redmond Payne, M.D., San Francisco:

... Now when Mules' operation is done, that is, the cornea amputated at the limbus, the sclera eviscerated and a vitrified glass ball enclosed, the orbital cavity is completely filled. . . .

From some personals:

... The engagement of Dr. William Le Moyne Wills to Miss Susie Patton, both of Los Angeles, has been announced. . . .

... Dr. Ernest Bryant and Mrs. Bryant (who was Miss Susie Bixby until July) were in San Francisco for the closing days of their honeymoon. . . .

... Dr. Emmet Rixford of San Francisco was elected president of the American Surgical Association at its recent meeting in St. Louis. The next meeting of this association will be held in San Francisco. . . .

... Dr. Ray Lyman Wilbur, formerly assistant professor of physiology at Stanford University, has resigned his position and will devote his time to the practice of medicine at Stanford. Doctor Wilbur has recently returned from a year's study in Europe. . . .

From some county medical society meeting reports:

Alameda County.—The regular meeting for August was held on Tuesday, the 9th, the president, Dr. Maher, in the chair. Dr. Hubert Rowell of Berkeley read a paper on the subject of "Meningitis," in which

he discussed the various forms of inflammation of the membranes of the brain, their causation, symptomatology and treatment; he gave the history of several cases that had come under his personal observation. The paper was comprehensive and scholarly, and elicited considerable discussion from the members present. . . .

... *San Francisco County.*—A symposium on tuberculosis was next opened by Dr. William Fitch Cheney, who discussed the "Early Diagnosis of Tuberculosis." Doctor Cheney dwelt with special emphasis upon the fact that the greatest care and patience must be exercised and repeated examinations made in order to make the diagnosis at a time when it is of most value to the patient. After bacilli appear in the sputum the case has reached a dangerous stage of advancement. . . .

... Dr. Henry Gibbons, Jr., said that the open-air treatment seemed to be regarded as a new thing, whereas it really is not. He said there were a number of persons still living for whom his father had prescribed the open-air treatment twenty-five or thirty years ago. . . .

... Dr. Philip K. Brown thought the x-rays of little or no value in making an early diagnosis. . . .

... Dr. Kaspar Pischel called attention to the recent statement of Wood of Philadelphia to the effect that he had found bacilli in a large number of tonsils removed from patients who were not tubercular. . . .

Under News Items:

... *Pacific Society of Railway Surgeons.*—The society was called to order by the president, Dr. W. B. Coffey, at the St. Francis Hotel, San Francisco, August 17. The society, though not an old one, is in excellent condition, and reports a membership of 150. The meetings were well attended, and in every way successful. . . .

... *Lane Medical Library.*—It has been announced that Cooper College is to erect a building and establish a magnificent medical library in San Francisco, on the corner of Webster and Sacramento streets. This action is in accord with the wishes of Doctor Lane's widow. . . .

DEPARTMENT OF PUBLIC HEALTH

By W. M. DICKIE, Director

How to Revive the Apparently Drowned.—The season is here when many lives are lost through drowning. Many persons who have apparently drowned can be made to breathe again if the prone pressure method of artificial respiration is applied according to the standard directions presented here. These directions should be posted at all places in the state where there is public swimming and bathing. Those who indulge, actively, in aquatic sports should not only memorize the instructions but they should also practice the methods applied in order that they be prepared to act in any emergency associated with drowning.

How to Give Artificial Respiration by the Prone Pressure Method.*—1. Lay the patient on his belly, one arm extended directly overhead, the other arm bent at elbow and with the face turned outward and resting on hand or forearm so that the nose and mouth are free for breathing.

2. Kneel straddling the patient's thighs with your knees placed clear of the patient's hip bones. Place the palms of the hands on the small of the back with fingers resting on the ribs, the little finger just touching the lowest rib, with the thumb and fingers in a

* This method has been approved by the following organizations: American Telephone and Telegraph Company; American Red Cross; American Gas Association; Bethlehem Steel Company; National Electric Light Association; National Safety Council; Bureau of Medicine and Surgery; Navy Department; Office of the Surgeon-General, War Department; United States Bureau of Mines; United States Bureau of Standards; and United States Public Health Service.

natural position, and the tips of the fingers just out of sight.

3. With arms held straight, swing forward slowly so that the weight of your body is gradually brought to bear upon the patient. The shoulders should be directly over the heel of the hand at the end of the forward swing. Do not bend your elbows. This operation should take about two seconds.

4. Now immediately swing backward so as to remove the pressure completely.

5. After two seconds, swing forward again. Thus repeat deliberately twelve to fifteen times a minute the double movement of compression and release, a complete respiration in four or five seconds.

6. Continue artificial respiration without interruption until natural breathing is restored, if necessary, four hours or longer, or until a physician declares the patient is dead.

7. As soon as this artificial respiration has been started and while it is being continued, an assistant should loosen any tight clothing about the patient's neck, chest, or waist. Keep the patient warm. Do not give any liquids whatever by mouth until the patient is fully conscious.

8. To avoid strain on the heart when the patient revives, he should be kept lying down and not allowed to stand or sit up. If the doctor has not arrived by the time the patient has revived, he should be given some stimulant, such as one teaspoonful of aromatic spirits of ammonia in a small glass of water or a hot drink of coffee or tea, etc. The patient should be kept warm.

9. Resuscitation should be carried on at the nearest possible point to where the patient received his injuries. He should not be moved from this point until he is breathing normally of his own volition, and then moved only in a lying position. Should it be necessary, due to extreme weather conditions, etc., to move the patient before he is breathing normally, resuscitation should be carried on during the time that he is being moved.

10. A brief return of natural respiration is not a certain indication for stopping the resuscitation. Not infrequently the patient, after a temporary recovery of respiration, stops breathing again. The patient must be watched and if natural breathing stops, artificial respiration should be resumed at once.

11. In carrying out resuscitation it may be necessary to change the operator. This change must be made without losing the rhythm of respiration. By this procedure no confusion results at the time of change of operator and a regular rhythm is kept up.

Steps Taken to End Imported Meningitis.—Eight cases of epidemic meningitis appeared early in July among Chinese interned at the United States Immigration station on Angel Island. It is believed that this group of cases represents the last of epidemic meningitis among Orientals in California because, since an executive order was issued by President Hoover, which took effect June 21, migration from Chinese and Philippine Island ports is prohibited except under stringent regulations of the United States Public Health Service. These regulations, as now enforced, will undoubtedly provide adequate safeguard against the importation of cases and carriers of meningitis into Pacific Coast ports and will mark the end, for the time being, of epidemics of this severe disease among Filipino laborers and other groups of workers in California agricultural districts.

The meningitis situation in California at the present time is better than it has been at any period since last fall, when the epidemic now waning made its appearance. A few cases are reported each week in scattered portions of the state, but the arrival of warm weather and the resulting tendency to reduce overcrowding conditions has without doubt played an important part in the termination of the epidemic.

More Rocky Mountain Spotted Fever Cases Reported.—Five cases of Rocky Mountain spotted fever have been reported to the State Department of Public

Health during the month of July, bringing the total number of cases reported this year to thirteen. This disease, which is transmitted by the common wood tick, produces a severe type of fever which, in some sections of the West, is highly fatal. In California, its presence is confined, almost exclusively, to a few of the counties in the northeastern part of the state. It is more prevalent in Montana than in any other state, but Idaho, Oregon, Washington, and Nevada frequently report considerable numbers of cases. It has been specially prevalent in Oregon this year with a high proportion of deaths reported. Control measures are almost exclusively against the wood tick. A vaccine has been developed which promises to be of value in the treatment of the infection and which is available, free of cost, to physicians who attend cases of the disease.

List of Diseases Reportable by Law.—Anthrax, beriberi, botulism, cerebrospinal meningitis (epidemic), chickenpox, Asiatic cholera, coccidioid granuloma, dengue, diphtheria, dysentery (amebic), dysentery (bacillary), encephalitis (epidemic), erysipelas, flukes, food poisoning, German measles, glanders, gonococcus infection,* hookworm, influenza, jaundice (infectious), leprosy, malaria, measles, mumps, ophthalmia neonatorum, paratyphoid fever, pellagra, plague, pneumonia (lobar), poliomyelitis, rabies (animal), rabies (human), Rocky Mountain spotted (or tick) fever, scarlet fever, smallpox, syphilis, tetanus, trachoma, tuberculosis, tularemia, typhoid fever, typhus fever, undulant (Malta) fever, whooping-cough, and yellow fever.

Quarantinable diseases—Cerebrospinal meningitis (epidemic), Asiatic cholera, diphtheria, encephalitis (epidemic), leprosy, plague, poliomyelitis, scarlet fever, smallpox, typhoid fever, typhus fever, and yellow fever.

Morbidity* — Diphtheria.—Thirty-seven cases of diphtheria have been reported as follows: Alameda County 1, Alameda 1, Oakland 1, Los Angeles County 5, Inglewood 2, Long Beach 1, Los Angeles 12, Maywood 2, Merced County 3, Santa Ana 1, Hollister 1, San Francisco 2, San Joaquin County 1, Santa Clara County 1, San Jose 1, Lindsay 2.

CALIFORNIA BOARD OF MEDICAL EXAMINERS

By C. B. PINKHAM, M.D.
Secretary of the Board

News Items, August and September

The Illinois and Other Diploma Mill Scandals

The inside story of how a diploma and license mill printed spurious certificates and state seals was told last night by a man who admitted, the state's attorney's investigators said, that he had made photostatic copies of the originals for counterfeiting plates. The story, Patrick Roche, chief investigator, said would result in new arrests and indictments immediately. Several Chicago printing and engraving firms were said to have been named. Jacob Crane, formerly a printer of Springfield, Illinois, was seized upon information supplied by Albert Carl Barron, one of seven men identified in the case. Crane, according to Roche, said that diplomas of the Rush Medical College, the Northwestern University Medical School, and the University of Wisconsin Medical School were forged, as well as internes' certificates from the Cook County (Chicago) Hospital and Illinois state licenses and seals. So thorough was the mill, Roche said, that applicants without college education could purchase diplomas and state licenses, both apparently bona fide, to practice in Illinois and elsewhere. More than one thousand fake licenses are said to have been sold for approximately \$2000 each, and diplomas at a still higher price. Barron admitted last night that at his

* From reports received on July 22 and 23 for week ending July 20.

recent indictment and released on bonds, he and Crane had taken the spurious engravings and thrown them into the drainage canal. Roche stated the floor of the canal would be searched today. A statement was obtained from Roche by a "doctor," whose name was not revealed, that he had paid the ring \$8500 for a state license and a "Class A" medical school diploma. Roche declared that the investigators today would question Chicago concerns accused by Crane of having made forged state seals and that, if the charges were substantiated, indictments would be sought (Associated Press dispatch, dated Chicago, August 6).

* * *

That a prison-hatched plot to set up "medical diploma mills" here and elsewhere was uncovered by the arrest of K. Higashi of 111 Bunker Hill Street, was asserted yesterday by Investigator Carter of the State Medical Board. . . . Higashi is a Japanese and has served a term in Leavenworth Federal Prison for illegal narcotic peddling. . . . At the request of Investigator Carter the court fixed bail pending preliminary hearing on the 30th inst. at \$10,000. . . . A Chinese said Higashi offered for \$960 a doctor's diploma which he represented would entitle the buyer legally to peddle dope. . . . Investigator Carter of the State Medical Board investigated from the angle that Higashi had tried to start a "diploma mill." Mr. Carter said Higashi, Meadows (Rush), a doctor, and an Indiana lawyer were convicts together in Leavenworth prison. There, Carter says Higashi told him, the scheme was proposed by the imprisoned doctor, who professed to have good connections with real medical colleges. This doctor, the investigator added, convinced his little clique of inmates that it would be a profitable "racket" to establish a "medical school" in Los Angeles, Mexico, Indiana, and Shanghai, each man to head one. . . . Higashi told Mr. Carter that the doctor in prison said he had connections for establishing branches of the University of Chicago Medical School. . . . When Higashi was apprehended, a medical diploma was found in his possession (Los Angeles Times, July 25, 1929). The diploma referred to as found in Higashi's possession was an excellent replica of the medical diploma issued by the University of Illinois on which was engrossed the name Karatsu Higashi, the date June 1911, with an official seal. This seal Higashi had made in Los Angeles and was seized at the time of the raid on Higashi's office.

* * *

Rush Meadows, former football hero, lawyer and promoter—and just now a prisoner in the county jail—today was linked up with the State Medical Board's investigation of an international "diploma mill," said to have been operating on a huge scale in the sale of spurious physicians' certificates. It was a "prison-hatched" plot, according to Albert Carter, special agent for the . . . State Board of Medical Examiners. . . . Forged diplomas of the University of Illinois, a seal of that institution and papers showing that at least four other schools in the Middle West had figured in the scheme, also were found, the officers reported. . . . J. E. Osborne was chairman of the board of directors of Meadows' Asia Coast Company. The operations of the ring were far-flung, according to Carter, and among those whose names were found. . . . H. W. Downell (Donwell), M.D. of Kansas City was to be questioned. Meadows is in the county jail in default of \$36,000 bail in his most recent escapade in which he is said to have forged the name of former President Coolidge, among others in an alleged extortion plot (Los Angeles Evening Herald, July 24, 1929).

At the July meeting of the Board of Medical Examiners the following action was taken in regard to various licentiates:

Archibald A. Atkinson, M.D., July 18, 1929, guilty of violation of probation, continued to October meeting.

Norman Baker, M.D., July 15, 1929, restored, probation five years.

Roy L. Buffum, M.D., guilty, five years' probation.

Maria Caron, midwife, July 17, 1929, revoked.

Stuart N. Coleman, M.D., July 16, 1929, restored without narcotic privileges.

William S. Fowler, M.D., July 18, 1929, narcotic privilege restored, probation continued.

Norman H. Goodenow, M.D., July 17, 1929, probation five years without narcotic or alcohol permit.

Wendell O. Gregg, M.D., July 18, 1929, probation terminated.

George H. LaBerge, M.D., July 17, 1929, dismissed.

Roy S. Lanterman, M.D., continued to October meeting.

Samuel C. Long, M.D., July 18, 1929, probation terminated.

Wilson McKenery Moore, M.D., July 16, 1929, probation three years without narcotic or alcohol permit.

Leonard M. Pulsifer, M.D., July 16, 1929, probation five years without narcotic permit.

Eugene Rinaldo, M.D., continued to October.

Moses Edwin Smith, M.D., July 16, 1929, revoked.

Ormiston Swayze, M.D., July 17, 1929, probation five years without narcotic permit.

Frederick B. Tapley, M.D., July 17, 1929, revoked.

Paul Traxler, M.D., continued to October meeting.

Irving L. Ward, continued to October meeting.

Joseph T. Wrenn, M.D., July 16, 1929, revoked.

Donald Smith resigned today as the head of the Mendocino State Hospital. He will be succeeded by Charles Sisson. Doctor Smith has headed the institution since 1912 (Pomona Progress Bulletin, July 8, 1929).

Branded by prosecutors as members of a widespread ring dealing in fraudulent medical licenses, seven men were indicted by the Cook County grand jury today, and four of them were under arrest tonight—one in Pittsburgh (Pennsylvania), one in St. Louis, one in Springfield (Illinois), and the other here. Operations of the seven are said to have extended over several states and a period of about three years. Licenses, it is charged, were sold to persons not entitled to them for from \$600 to \$3000. Barron, when arrested, was carrying a suitcase full of fake licenses and a stock of seals, officers asserted. Among the licenses issued it is charged were scores to graduates of a medical school in Connecticut, which was closed after an investigation (Associated Press dispatch, dated Chicago, July 14, printed in the San Francisco Examiner, July 15, 1929).

Dr. Rose G. Boido, woman physician, today was charged with murder as the result of the death of Dorothy Paul, 22, stenographer, from an alleged illegal operation (International News Service dispatch, dated Los Angeles, July 31, published in the San Francisco Examiner, August 1, 1929).

According to report of Special Agent Davidson, Lai Tai Bong, Chinese herbalist of Stockton, pleaded guilty in that city on July 3 to a charge of violation of the Medical Practice Act and was sentenced to pay a fine of \$100.

According to the Napa Journal of June 21, 1929, W. Leighton Bonner, referred to as "one of the most notorious bank crooks in the entire nation," was arrested in connection with an asserted charge of swindling banks. The Board of Medical Examiners has a very complete history of the operations of "Dr." Bonner, referred to as a confidence man who has talked his way in affluence from Mexico to Canada

and from the Mississippi to the Pacific. His police record, which is rather comprehensive, classes him as Gentry, Gentran, and Robinson. Special Agent Davidson of the Board of Medical Examiners declares that evidence shows that, although Bonner is married, he has a girl in every port, all highly in love with him and all studying Spanish so they can go to Mexico with him. According to a press dispatch dated Napa, July 31, 1929, printed in the San Francisco *Examiner* of August 1, 1929, "W. L. Bonner, self-asserted medico and dapper heartbreaker, was sentenced to serve five years in San Quentin by Superior Judge Percy S. King today after he had pleaded guilty to having defrauded a local bank out of \$50."

Charged with vagrancy and operating a massage parlor without a license, Anna Bouk, 44 years of age, was arrested at 421 H. W. Hellman Building, yesterday by police officers Quinn and Sparks, and Bert Humison, chief inspector of the Chiropractic Board (Los Angeles *Times*, June 18, 1929). (Previous entries May 1929.)

Dr. R. L. Buffum, prominent Long Beach physician, was acquitted of a charge of alleged violation of the state narcotic law by a jury last night which returned its verdict of not guilty at 7:40 p. m., after deliberating less than an hour and a half (Long Beach *Press Telegram*, June 22, 1929). (Previous entries, April 1929.)

The United States Circuit Court here today has granted a new trial to Dr. George A. Buhler of Los Angeles, who was convicted last December of conspiring to mulct investors in Salt Lake potash lands (San Francisco *Call*, July 2, 1929). (No record of license in California.)

Diploma mill charges brought the arrest last night of Dr. Charles A. Cale, president of the Chiropractic College at 1406 West Seventh Street. The arrest followed charges that chiropractic diplomas were being sold on a state-wide scale to inexperienced practitioners. . . . Today, however, a sweeping investigation of Doctor Cale's methods in operating his college is to be launched by the district attorney's office (Los Angeles *Examiner*, July 31, 1929).

Y. L. Chan, alias Say Sang, operating a Chinese herbalist firm, Chang & Kong, was reported recently as having pleaded guilty to a charge of violation of the Medical Practice Act in the city of Stockton and fined \$100 and given a suspended jail sentence of ninety days. (Previous entry, January 1928.)

A license as chiropractor does not entitle the holder to prescribe medicine for another who is ill or to treat a person by means of diagnosis or prescription, and when he does so he is attempting to practice medicine within the province of the state Medical Practice Act, the District Court of Appeal has ruled in the case of Manuel Machado of Santa Barbara, who appealed from a conviction in the Superior Court of Santa Barbara County for practicing medicine without a license. Machado, in his appeal, contended the trial court made prejudicial error in failing to permit his attorneys to introduce evidence that he is a duly licensed chiropractor. He further contended that his case should have been tried under the state Chiropractic Act of 1923. The Appellate Court held that a review of the evidence showed that Machado, regardless of any license he had, practiced medicine and that, since he is not a licensed medical practitioner, he rightly was found guilty of violating the state medical law. Judgment of the trial court was affirmed (Los Angeles *Journal*, July 4, 1929). (Previous entries, May 1929; June 1929.)

Trial of Dr. I. Jesse Citron, Beverly Hills physician, under federal indictment on a charge of

illegally issuing prescriptions for narcotics, yesterday was set for December 10 by United States Judge James. The doctor is asserted to have issued prescriptions with which Alma Rubens, motion picture actress, obtained narcotics (Los Angeles *Times*, July 30, 1929).

Charged with practicing medicine without a license, warrants were issued yesterday for the arrest of J. P. Conway, Chico Indian "medicine man," and Sam Lee, Fifth Street Chinese herbalist. The warrants were sworn to by J. W. Davidson, state officer. The herbalist was arrested and was released on \$500 cash bail. The other man went out of Chico yesterday, and officers are awaiting his return to serve the warrant (Chico *Recorder*, July 9, 1929).

The recent decision of Brown vs. Shortlidge, California Appeals (April 18, 1929), 277 Pac. 134, is of primary importance as indicating a progressive step in a departure from the almost universal rule that malpractice can only be established through expert testimony. . . . In the very recent case of Regan vs. Zimmerman, decided March 25, 1929, and found in 276 Pac. 107, the Supreme Court strongly implied that when necessary the doctrine of *res ipsa loquitur* will be applied in cases of the kind. In that case the question involved the use of an x-ray machine, but the reasoning is equally applicable to the use of any mechanical machine (Los Angeles *Journal*, June 24, 1929).

Unable to locate Melvin Richards, chief state witness, investigators asked today for the dismissal of charges against Dr. J. C. Cowle, head of the Cowle Chiropractic School, and the request was granted. . . . The chiropractor was accused of practicing without a state license. . . . Richards disappeared recently, Humison charged, at which time he told his employer he was going to leave the state and "get things fixed" so he would not have to testify (C. N. S. Press dispatch, dated Los Angeles, July 2, printed in the Pasadena *Post*, July 2, 1929).

According to reports, Bertha Feldheiser pleaded guilty in the court of Los Angeles, July 26, 1929, to a charge of violation of the Medical Practice Act and was sentenced to pay a fine of \$100, said sentence being suspended for six months.

Following the death of a 23-year-old girl, Dr. G. W. Darrow, Azusa physician, and Harry Smith, twenty, 4925 Malta Street, are held in the county jail on suspicion of murder. Jennie Peterson, twenty-three, 918 South Breed Street, died of an illegal operation. Deputy Sheriffs Gompert and Crowshorn say, in the office of Doctor Darrow. The two suspects say the girl died before any surgery had been performed (Los Angeles *Record*, July 24, 1929). Dr. G. W. Darrow, Azusa physician, was indicted by the county grand jury yesterday on a charge of murder growing out of the death of Mrs. Jennie Peterson, twenty-three, of 918 South Breed Street, from an asserted illegal operation (Los Angeles *Examiner*, July 27, 1929).

George O. (Doc) De Moss, train robbery suspect, now held for California authorities at Kankakee, Illinois, on a charge of highway robbery, has a war record, it was revealed here today. Presidio records show the suspect was stationed at Camp Dix, New Jersey, as an emergency medical officer as late as 1919. Further details of his war service are vague. De Moss is charged by authorities of San Jose, California, with luring a San Francisco vegetable buyer to a lonely road near San Jose and, with the help of

accomplices, robbing him of \$1500. He was arrested by Illinois authorities in company with R. E. Fleagle, whom authorities say has been definitely identified as one of the three bandits who held up a Southern Pacific train near Baypoint, California, several months ago (United Press dispatch, dated San Francisco, July 30, printed in the *Sacramento Bee*, July 30, 1929).

H. H. Gormley, who says he was a practicing physician in New York for a number of years, but who holds no license to practice in California, today pleaded not guilty to a charge of selling a headache preparation containing narcotics (*Sacramento Bee*, August 7, 1929). A report from the New York Board of Medical Examiners relates the revocation on January 1, 1925, of Harry H. Gormley's license to practice, based upon conviction of filing of false certificate of death, following which he is alleged to have been sentenced to a term of not less than fifteen months in the New York penitentiary.

Because he is said to have lured a former dope addict back to the habit, Dr. Herbert Graham of 1628 Electric Avenue, Venice, today faced felony charges for narcotic selling. His arrest was engineered by the addict's wife, police report. The woman, whose name has been withheld, found her husband had been buying dope and arranged with Policewoman Mary Ross to make another purchase last night, when Doctor Graham was arrested and a large quantity of drugs was seized (*Los Angeles Herald*, July 9, 1929).

Preparation of an initiative measure for the 1930 general election, designed further to regulate chiropractic practitioners in California, was the major business before the Progressive Chiropractic Association of California as it opened its annual convention at the state capital today (*Sacramento Bee*, July 12, 1929).

George Johnson, charged under the Medical Practice Act, yesterday withdraw his plea of not guilty entered in the police court some time ago and entered a plea of guilty. . . . Police Judge Cecil S. Johnson sentenced Johnson to pay a fine of \$100 and to serve six months in the county jail, the jail term being suspended on condition that he leave the state and stay away for at least two years. . . . Johnson was arrested some weeks ago in a drive on men alleged to be practicing medicine here without licenses and in other ways violating the law (*Stockton Record*, July 11, 1929). (Previous entries, February 1926; September 1926; January 1927; March 1927.)

Dr. J. Morris Kalmus of New York was arrested here today, charged with promoting a physicians' license racket. The authorities state that Kalmus has confessed (Universal Service dispatch, dated Chicago, July 4, printed in the *San Francisco Examiner*, July 5, 1929).

Erich M. Kammeyer, San Diego optometrist, paid a \$100 fine imposed yesterday in the superior court by Judge Griffin, following conviction of violating the state Medical Practice Act. In addition, Kammeyer must no longer advertise himself as a specialist in nervous disorders, and was placed on a year's probation. A licensed optometrist, Kammeyer exceeded the scope of his license, the jury decided, in practicing a method of his own in treating optical ailments (*San Diego Union*, July 21, 1929).

Dr. O. A. Kvello, physician of Hemet, was found guilty of driving while intoxicated here today. A jury in the superior court of Judge O. K. Morton recommended that Doctor Kvello spend six months in the Riverside road camp prison in the San Jacinto mountains (Press dispatch, dated Riverside, July 26, printed in the *Los Angeles Record*, July 26, 1929). (Previous entry, May 1926.)

Dr. William A. Lang, 68, was arrested in his office in Long Beach yesterday, charged with the murder of Mrs. Bertha Rudersdorf, 25-year-old wife of W. C. Rudersdorf, 112 Magnolia Avenue, that city. Mrs. Rudersdorf died at the Seaside Hospital of peritonitis, which is alleged to have resulted from an illegal operation (*Los Angeles Examiner*, July 13, 1929).

Dr. Manuel Machado, formerly a chiropractic practitioner in this city, was arrested in Los Angeles Tuesday on a complaint of E. R. Trigueira, 717 South Broadway, Santa Maria, charging grand theft; . . . that Machado had obtained the sum of \$25 from him under false pretenses (*Santa Maria Vidette*, June 14, 1929). (Previous entries, December 1928; May 1929; June 1929.)

Recent reports from Glendale relate that an individual calling himself Dr. William Manella and telling fanciful tales of his affluence, medical credentials, etc., is alleged to be issuing fraudulent checks. The records of the Board of Medical Examiners show that in 1917 William Manella was reported as having been fined \$200 and sent to the house of correction at Chicago for one year on a charge of practicing without a license, it being further related that he has served six years in the penitentiary in Pennsylvania, three years in Nebraska, and fifteen months in California. The California Criminal Identification Bureau records show, under various aliases, that he has been in and out of prisons during the period of 1913 to date. His California record shows him to be San Quentin No. 26645, and Folsom No. 12137. Recent reports relate that about July 29 Manella was issuing fraudulent checks from Kingman, Arizona. Manella is described as about five feet five, weighing about 130 pounds, speaking with a decidedly foreign accent, and a plausible talker. Licentiates are warned to notify the police immediately in case he makes an approach. Reported in custody in Denver, Colorado.

Florentine Poras was charged with practicing medicine without a license in a complaint issued at the district attorney's office yesterday. The complaint was signed by J. W. Davidson of the Board of Medical Examiners (*Fresno Republican*, July 25, 1929).

An individual who registered at the Hotel St. Francis, San Francisco, on or about March 30, 1929, as Dr. H. M. Stewart, Boston, Massachusetts, was subsequently arrested by police on a charge of defrauding an innkeeper and sentenced to six months in the county jail, according to Investigator Davidson of the Board of Medical Examiners. It is reported that his true name is Henry M. Bullfinch. His police record shows that he issued a fraudulent check on the National Shawmut Bank of Boston, Massachusetts, in March 1925 for \$185.40, and that he was formerly employed by the Lubricant Laboratories, Inc., Boston. He is alleged to have represented himself to be a doctor "all over the country and left a train of bad checks behind him wherever he has been."

Dr. William P. Seibert, drugless physician of 1611 Huntington Drive, was arrested yesterday by Deputy Marshal Mangerima on a warrant charging the physician with making a false oath in bankruptcy. . . . Doctor Seibert is alleged to have assigned an expensive automobile to his cousin, Emma Diener, prior to going through bankruptcy in 1927 (*Los Angeles Examiner*, July 27, 1929). (Previous entries, June 1926; August 1926.)

Sai Sang, alias Dr. Chan, fifty-one, 718 East Main Street, was arrested yesterday afternoon by State Medical Inspector Davidson on a charge of practicing medicine without a license (*Stockton Record*, July 24, 1929).

CALIFORNIA AND WESTERN MEDICINE

VOLUME XXXI

OCTOBER, 1929

No. 4

CIRCULATORY DISTURBANCES OF THE EXTREMITIES*

WITH SPECIAL REFERENCE TO THROMBO-ANGIITIS
OBLITERANS AND ELEPHANTOID CONDITIONS

By FREDERICK LEET REICHERT, M. D.
San Francisco

DISCUSSION by Alfred C. Reed, M.D., San Francisco;
Joseph K. Swindt, M.D., Pomona.

IMPAIRMENT of circulation and disturbance of the circulatory balance in an extremity may produce a variety of symptoms which can be attributed to damage of the vessels themselves, and in rare instances to a derangement of the sympathetic nervous mechanism which secondarily affects these vessels.

In a normal extremity a physiological balance is maintained between the arterial system of efferent vessels and the afferent vessels of the venous and lymphatic systems. Disturbance of this balance is seen in the cold leg of the arteriosclerotic person, in the swollen and often ulcerated leg associated with varicose veins, and in the huge, heavy limb of elephantiasis. In other words, circulatory disturbances may be primarily arterial, venous or lymphatic in their origin; or, by reason of the close relationship and interdependence of these three systems, the disturbance may be the result of their combined dysfunction.

The arteriosclerotic individual probably illustrates the commonest form of circulatory disturbances. The symptoms arising from the gradual occlusion of the arteries and arterioles in this disease need not be enumerated. The pathological process in the extremity is confined to the arterial system. When the arteries are injected with a mass opaque to the passage of x-rays, such as Hill's bismuth oxychlorid mass,¹ it is evident that the symptoms are the result of a greatly impaired arterial supply to the limb.

The first illustration shows the arterial tree of a normal individual as outlined by Hill's x-ray mass, and clearly defines the main arterial trunks in the leg; popliteal, anterior tibial, posterior tibial and peroneal, with an accurate pattern of the metatarsal arteries of the foot.

* From the Department of Surgery, Stanford University Medical School.

* Read before the General Surgical Section of the California Medical Association at the Fifty-Eighth Annual Session, May 6-9, 1929.

ARTERIOSCLEROSIS

Figure 1 also shows an arterial injection of the amputated leg of a man of sixty, with a history of circulatory difficulty in both legs for several years and diabetes mellitus of one year's duration. Gangrene had developed in the little toe of the right foot, and plain x-rays of both legs showed marked calcification in the posterior tibial artery. On injection the normal arterial tree was found to be obliterated with little, if any, evidence of compensatory collateral circulation. This is the typical x-ray picture of injection studies on thirteen legs amputated for arteriosclerotic gangrene. Dissection and histological examination of the arteries in such extremities shows thickened, rigid vessels, with obliteration of the lumen.

Only a small amount of the injecting material, 20 to 40 cubic centimeters, is required to fill all the vessels in an arteriosclerotic extremity.



Fig. 1.—Arterial injection with Hill's mass in a normal (right) and an arteriosclerotic extremity.

The next case is that of a man of seventy-two with generalized arteriosclerosis, who sought relief for varicose veins. Those on the good, or right, leg were treated by the injection of a sclerosing solution with relief and with healing of an indolent ulcer. Two years later a varicose



Fig. 2.—Arterial injection in thrombo-angiitis obliterans showing extensive collateral circulation.

ulcer developed near the left ankle and shortly after gangrene appeared in the left fourth and fifth toes. After amputation above the knee, the veins were injected with Hill's mass, nearly 300 cubic centimeters of fluid being needed. The x-rays showed the tremendous venous bed, most of which was superficial, and the extent of the varicose veins well down into the foot. Dissection of the leg showed the arteries to be sclerosed and obliterated. The lack of balance between the arterial and venous systems in this case may have been a factor in the development of gangrene, as Morton and Pearse² and De Takáts, Quint, Tillotson and Crittenden³ have recently indicated; and has led to our subsequent treatment of obliterating the varicose veins of patients with threatening gangrene from endarteritis who had evident varicosities. The decrease in the venous bed by thrombosis leads to improvement in the circulation to the threatened area and with definite amelioration of symptoms, especially those of claudication. It is still problematic whether the ligations of the popliteal vein in the impending gangrene of arteriosclerotics as Oppel⁴ suggests, or even a more proximal ligation of the venous trunk, according to the principle of Holman and Edwards⁵ is to be advocated.

THROMBO-ANGIITIS OBLITERANS

Our first injection of an extremity amputated for Buerger's disease was made in 1922, when Hill had just introduced his opaque x-ray mass. To our great astonishment, in this case of a man of forty-five (Figure 2), the x-ray films showed an absence of the normal arrangement of the vessels and an extensive collateral circulation with many vessels extending down to the point of gangrene. The popliteal artery was thickened but not thrombosed. The main arteries of the leg and

foot were all obliterated. The toes on the opposite foot had been amputated at intervals of from ten to six years previously for gangrene, and five years before, the third and fourth toes were removed. Doctor Holman amputated the leg because of gangrene of the big toe and to relieve the man of pain so excruciating that he threatened suicide. Nine days after amputation gangrene appeared in the right thumb.

Buerger's disease or thrombo-angiitis obliterans, with its cold, painful, sensitive extremities, presents a most interesting condition of disturbed circulatory balance. Histologic studies show that although the pathologic process involves mainly the arterial system, there is also thrombosis and inflammation in the veins. The extent of this process may be limited to the smaller and more distal vessels of the extremity, or it may be evident in the proximal part of the extremity, often leading to occlusion of the main arterial trunk. Clinically, in this slowly developing disease there are periods of exacerbation followed by varying periods of remission which Meleney and Miller⁶ interpret from their pathologic and injection slides as a contest between two forces, blockage of the vessels on the one hand and collateral blood vessel development on the other. Whether or not gangrene develops is determined by the relative speed of the two processes. Since there is a limit to the speed with which collateral circulation develops, Dr. Dean Lewis and I felt that a stimulus to the development of extensive collaterals could be obtained by ligation of the femoral artery just distal to the profunda⁷ and since 1926 we have had a number of patients who have been definitely improved by this operation. In some cases we found the femoral artery already occluded, in which case the vessel was divided merely for the relief of pain. Numerous other procedures have led to improvement, such as intravenous saline injection, foreign protein injection, ligation of the deep veins, ramisectomy and ganglionectomy, but none of these seem to yield results when the process is confined mainly to the proximal part of the extremity.

EDEMA

Edema of the extremities can be as incapacitating as the arterial diseases I have mentioned. The edema caused by venous stasis in varicose veins produces much suffering and limitation of activity. Blood-vascular edema occurring in nephritis from capillary injury leads to swelling throughout all the tissues of the extremity, producing a pitting edema.

A lymph edema often accompanies impairment in the venous return of an extremity as is seen in varicose veins or thrombophlebitis. This feature is rarely recognized and the swollen, indurated limb is usually attributed solely to obstruction of the venous outflow, whereas the true, primary cause is obliteration of lymphatic vessels by infection with resulting lymph stasis.

LYMPHATICS

I want to emphasize the presence and the importance of the lymphatics whenever body circulation is being considered. Lymphatics are

modified veins and the lymphatic system, with its definite vessels and its definite capillaries of endothelium, plays as definite a rôle in absorption as does the venous system. The venules or blood capillaries contain plasma, the lymphatics contain lymph, and the tissue spaces contain tissue fluids. The lymphatic system merits an objective point of view which recognizes it as an integral part of the afferent circulatory system. The lymphatico-venous return then constitutes the afferent side of circulatory balance.

A diagram of the lymphatic system, made many years ago, shows the great number of lymphatic vessels of the leg and thigh, both in the superficial group and in the deeper set. Eventually both superficial and deep lymphatics drain into the same regional lymph glands.

ELEPHANTIASIS

Simple lymph edemas are the result of stasis. Add the factor of infection and we have an entirely different picture, that of elephantiasis. Chronic infection, usually caused by a streptococcus, after a time readily leads to a progressive hypertrophy of the hypodermal and dermal connective tissue. This fibromatosis, as Matas⁸ pointed out in 1913, preceded by and associated with lymphatic and venous stasis, and the hyperplasia of the connective tissue with a brawny, hard lymph edema, are distinctive features of elephantiasis. Simple mechanical blockage of the lymphatics causes a regional lymph edema, but the characteristic fibromatosis, and the histologic changes peculiar to elephantoid states, cannot be produced without pathogenic infection.

X-rays taken to define the soft tissues of an extremity rather than bone, clearly show this difference in edemas.



Fig. 3.—Soft tissue x-ray of chronic venous edema of five months' duration in a case of glomerulonephritis. All tissues are edematous.



Fig. 4.—Soft tissue x-rays showing characteristic subcutaneous fibromatosis in an elephantoid leg compared with the unaffected side. (Retouched photograph.)

Figure 3 is an x-ray of a man who had a chronic, vascular edema of over five months' duration from glomerulonephritis. This soft tissue x-ray shows a diffuse swelling throughout all of the tissues of the leg. Subsequent to treatment in the hospital the edema disappeared, leaving the legs of normal size and without any thickening of the skin or subcutaneous tissue.

That an elephantoid state is often found associated with chronic venous stasis is seen in the case of a woman of sixty-three, with a history of varicose veins and a chronic eczema of the right leg for forty-eight years. Scratching finally led to an ulcer three years ago which was treated by varicotomy. The incisions became infected, the leg inflamed and swollen, and since then there have been recurring attacks of inflammation with progressive increase in the size of the leg and in the degree of induration in the superficial tissues.

X-rays of the lower limbs, taken to demonstrate the soft tissues, showed the great thickness of the subcutaneous tissues with numerous fibrous trabeculae, many of which were perpendicular to the skin surface. There was no evident increase in the musculature of the leg; only the skin and hypodermal structures were involved.

Another interesting case is that of a woman of forty-seven, whose left leg when she was eighteen was caught in a door, and inflammation and swelling which lasted for many weeks followed the accident. Eight years ago, after pregnancy, the veins of this leg became swollen and thrombosed, followed by "blood poisoning" and ulceration. For two years she has had recurrent attacks of erysipelas associated with nausea and vomiting, chills and fever, and a red erythematous involvement of the leg and thigh. Her x-rays (Figure 4) show this great thickening and fibrosis of the subcutaneous tissues.

These two cases have been considered end-

results of venous obstruction due to thrombosis of the veins, just as in phlegmasia alba dolens. But, as Homans⁹ has recently pointed out, and as Matas and Halsted have always taught, the inflammation and infection involve the lymphatic system as well, producing, not a pitting edema, but a hard, brawny lymph edema, which eventually leads to a chronic elephantoid condition of the extremity.

DANGER OF THE CHRONIC LEG ULCER

The chronic leg ulcer, with its low-grade infection and varicose background, tends to produce an elephantoid condition in the affected member which is evident on examination and by soft tissue x-rays. The possible development of such an elephantoid state in the leg should always be considered and its prevention insured by rapid epithelization of the ulcer. One method for securing healing, and restoration of circulatory balance is by sterilization of the ulcer, excision or thrombosis of the varicose veins and offending perforating veins, and then skin-grafting of the ulcer.

Another instance of elephantiasis is of a woman of seventy-one, who first felt a lump in the right breast sixteen years ago. Pain developed in the breast four years ago following a blow, and two years later a swelling developed in the axilla. One year ago the carcinomatous lump in the breast ulcerated, and since that time the right arm and forearm have shown progressive enlargement. Soft tissue x-rays of her arm and forearm show the characteristic picture of progressive elephantiasis on the right side. Elephantiasis such as this may follow the radical operation for carcinoma of the breast where healing is complicated by considerable scar tissue and a low-grade infection, as illustrated in Halsted's paper¹⁰ on elephantiasis chirurgica.

CONCLUSION

In presenting these instances of circulatory disturbances of the extremities, my purpose is to emphasize two rather neglected points: First, the great collateral circulation characteristically present in thrombo-angiitis obliterans; and, second, the significance of lymphatic function in the mechanism of circulatory balance.

Soft tissue x-rays of an extremity present a definite means of determining the extent and degree of elephantiasis or an elephantoid condition.

Stanford University School of Medicine.

REFERENCES

1. Hill, E. C.: Notes on an Opaque X-ray Mass, *Bull. Johns Hopkins Hosp.*, July 1924, Vol. xxxv, p. 218.
2. Morton, J. J., and Pearse, H. E. Jr.: Temperature Effect of Popliteal Vein Ligation in Thrombo-angiitis Obliterans and Arteriosclerosis, *Ann. Surg.*, August 1928, Vol. lxxxviii, p. 233.
3. De Takáts, G., Quint, H., Tillotson, B. I., and Crittenden, P. J.: The Impairment of Circulation in the Varicose Extremity, *Arch. Surg.*, February 1929, Vol. xviii, p. 671.
4. Oppel F.: Die Wietingsche Operation und der Reduciente Blutkreislauf, *Obstr. Centralbl. f. Chir.*, August 1913, Vol. xl, p. 1241.
5. Holman, E., and Edwards, M.: New Principle in Surgery of Large Vessels—Ligation of the Vein Proximal to the Site of Ligation of Artery, *J. A. M. A.*, March 19, 1927, Vol. lxxxviii, p. 909.
6. Meleney, F. L., and Miller, G. G.: A Contribution to the Study of Thrombo-angiitis Obliterans, *Ann. Surg.*, May 1925, Vol. lxxi, p. 976.
7. Lewis, D., and Reichert, F. L.: The Collateral Circulation in Thrombo-angiitis Obliterans, *J. A. M. A.*, July 31, 1926, Vol. lxxxvii, p. 302.
8. Matas, R.: The Surgical Treatment of Elephantiasis and Elephantoid States Dependent upon Chronic Obstruction of the Lymphatic and Venous Channels, *Am. J. Trop. Dis. and Preven. Med.*, July 1913, Vol. i, p. 60.
9. Homans, J.: Thrombophlebitis of the Lower Extremities, *Ann. Surg.*, May 1928, Vol. lxxxvii, p. 641.
10. Halsted, W. S.: The Swelling of the Arm After Operation for Cancer of the Breast. Elephantiasis Chirurgica—Its Cause and Prevention, *Bull. Johns Hopkins Hosp.*, October 1921, Vol. xxxii, p. 309.

DISCUSSION

ALFRED C. REED, M. D. (384 Post Street, San Francisco).—The clear-cut classification and differential pathology presented by Doctor Reichert is a joy indeed in a field where confusion often seems to reign supreme. I want to comment briefly on only one phase of this subject and that is the question of the nature of elephantiasis. Chronic lymphatic obstruction leading to the peculiar condition called elephantiasis, may be, in the first place, congenital or acquired. Congenital cases rest on an anatomical abnormality of stenosed lymph channels, analogous and perhaps at times related to a similar stenosis in the arterial system, as for instance in congenital total hemiatrophy. Acquired cases are either filarial or nonfilarial. Of the latter group we note elephantiasis following septic infection of lymph channels; toxic absorption of certain drugs following lues; resulting from pressure, as from tumor or glands and, after operation, associated with destruction of lymph vessels or their blockage by scar tissue.

Congenital cases also include Meiger's or Milroy's disease and often have a familial incidence.

In regard to filarial or true elephantiasis, unfortunately the pathogenesis is poorly understood and has been the subject of relatively little study. The entire subject of filariasis offers little but mystery to the student. There are numerous unexplained phenomena in the life history, transmission, pathogenicity, and symptomatology. Treatment is largely ineffective. The microfilariae disappear from the circulating blood with fair constancy before onset or with the appearance of elephantiasis. This is assumed to be due to mechanical blocking of access to the venous system. It may be, on the other hand, that death of the parent worms results in toxic changes which are responsible for the lymph obstruction. Usually long repetition of attacks of filarial or elephantoid fever or lymphangitis precede the actual enlargement of the part. Streptococcus infection is often supposed to coexist.

Elephantiasis is not the result of lymph stasis alone. Other factors are hypertrophy and fibrosis. There occur focal fibrosis and necrosis, and at times giant cell formation. In uncomplicated cases, affected parts are free of bacteria. Pathologic changes may be due to the toxic secretion of the worms, or disintegration of worms or microfilariae. Abscess may follow irritation from dead worms.

Where the lymphangitis is present there may be staphylococci or streptococci as secondary invaders.

It may be that irritation from worms in the vessels paves the way for bacterial invasion, even long after the death of the worms.

The location of chief exposure to bites of the infecting mosquitoes seems often to determine the location of the lesion. The incidence of elephantiasis is directly proportional to the percentage of the population showing microfilariae in the blood.

Treatment is eminently unsatisfactory except where the part affected is susceptible of amputation in whole or in part. The various operations designed to secure deep lymph drainage, such as the principle enunciated by Kondoleon, are successful in a minority only. Measures designed to promote absorption of fibrous infiltration by medical means are sometimes successful. Pressure and uniform support are helpful but not usually fully effective and never curative. Fibrolysin has been recommended, but is entirely without effect.

✻

JOSEPH K. SWINDT, M. D. (Pomona).—Humanity owes a debt of gratitude to Dr. Leo Buerger for his scientific studies of the circulatory diseases of the extremities. In these he singles out the condition of thrombo-angiitis obliterans in such a masterful manner that the disease is commonly designated by his name. The medical profession of California is likewise deeply obliged to Doctor Reichert for this paper, which so clearly and concisely portrays the fundamental pathology of these disabling disturbances in the vascular bed of the hands and feet.

During the past ten years I have been much interested in the subject of thrombo-angiitis. Doctor Buerger's studies led him to think that this was a disease peculiar to the Jewish race, but since the publication of his book has so aroused the interest of the profession it has been recognized in all races and in the young as well as the old. As time goes on we also realize that there is no definite single etiologic factor other than some type of chronic infection. This is quite clearly indicated by the very constant capillary inflammation, the so-called "wandering phlebitis," which characterizes the frequent exacerbations of Buerger's disease.

We need such papers as this to teach us how to avoid the common errors of diagnosis in painful conditions of the extremities. Long before some discriminating colleague makes a correct diagnosis these patients are mistreated for ingrowing nails, fallen arches, varicose veins, neuritis, rheumatism, and what not. All the time the patient goes about complaining of pain which is really out of all proportion to what may be honestly attributed to any of these ordinary conditions or anything which the doctor is able to discover in a casual examination. This inordinate pain, which in time amounts to torture, I think is the cardinal symptom of thrombo-angiitis. When it is encountered I think one will usually be able to find the isolated areas of active phlebitis which so readily differentiate Buerger's disease from these other conditions. At least it should arouse our suspicion to the point where we will undertake a thorough diagnostic study which should surely include these x-rays of the soft tissues emphasized so well by Doctor Reichert in this paper.

Naturally any treatment which is instituted after gangrene is present is going to prove highly unsatisfactory. However, there is good reason to hope for worthwhile relief from such operations upon the proximal arteries and veins as have been suggested by Leriche, Holman, Lewis, and Reichert.

The objective of these procedures is to restore a physiological balance between the efferent and afferent vascular channels, and may readily be carried out by any of us who are ordinarily versed in surgical anatomy and technique.

PULMONARY TUBERCULOSIS—NON-APICAL INFILTRATIONS*

REPORT OF CASES

By K. FISCHEL, M. D.

Los Angeles

DISCUSSION by Charles C. Browning, M. D., Los Angeles; F. M. Pottenger, M. D., Monrovia; Max Rothschild, M. D., San Francisco.

THE dogma that pulmonary tuberculosis in the adult almost invariably begins in the apical region, whence it spreads toward the middle field and the base, originated long before the advent of the x-ray. That the apices are the site of predilection, where phthisis first develops and from where it starts on its disastrous course toward the base, seemed proved conclusively by the fact that changes in other parts of the lungs are almost invariably preceded by positive findings at the apices and by innumerable necropsy reports, revealing pathology of apparently long standing in the apical parts whenever tuberculosis involving other parts of the respiratory organ was present and even when there was no history of active tuberculosis during life.

The doctrine that pulmonary tuberculosis in the adult begins in the apex, though not supported by animal experimentation, was so firmly established that radiography of the chest was welcomed as a new method to substantiate and not to reinvestigate critically the correctness of the theory.

CASES REPORTED IN LITERATURE

During and after the World War, however, many cases were reported in which the course of the tuberculous infection did not run true to form, and where the old theory of the apical origin of phthisis did not seem to fit. These cases were atypical for two reasons: the first, because the localization of the earliest demonstrable lesion was not the apex, but some part of the lungs below the clavicle; and second, because the first lesion was not proliferative in character but of the exudative (bronchopneumonic) type.

The onset and development of these nonapical infiltrations have been studied since 1920 by Franz Redeker, who as the head of a dispensary of big steel factories had carried out systematic physical and x-ray examinations of a closed group of a hard-working population. These plates enabled him to trace the origin of the numerous forms of acute and chronic pulmonary tuberculosis to infiltrations, which first appear below the clavicle. These infiltrations were known to French writers as far back as 1908. They were first described in 1923 by Wessler in New York in his textbook, "Diseases of the Chest," and later by Assman in Germany in 1925. Finally Fishberg, in 1928, gave an excellent description of infraclavicular infiltrations and reported eleven cases.

* From the General Hospital, Los Angeles, Tuberculosis Section, Charles C. Browning, M. D., Chief of Service.

* Read before the staff meeting, Medical Section, General Hospital, Los Angeles, February 25, 1929.



Fig. 1—B. R., 10 years. Definite parenchymatous infiltration in the right upper lobe.



Fig. 2.—Shadows of peribronchial structures increased in density with definite increase in density in the parenchymal portion of the upper right lung field in the second intercostal space.



Fig. 3.—Organized and calcified infiltration in the second right interspace.

RANKE'S THEORY

All descriptions, however, were of single cases because the work of Ranke, who had the vision to see the cause behind the single cases, was not sufficiently well known. Ranke's theory, advanced in 1916, made it possible for the German writers to give a plausible and logical interpretation of all nonapical lesions and has led to a revision of the time-honored doctrine of the apical origin of phthisis.

Redeker and his coworkers see in the infraclavicular infiltration the first focus due to a superinfection. It is their contention that pulmonary tuberculosis nearly always begins in some part of the lungs below the clavicle, from where it spreads through the formation of new foci to the middle field and the base, involving the apices at a much later period. While late apical tuberculosis is quite common, incipient apical tuberculosis is extremely rare. Our diagnosis of incipient apical tuberculosis is, therefore, a delayed diagnosis, our treatment is not early but late treatment. According to the newer German school, apical tuberculosis is nearly always benign and rarely progresses to open tuberculosis. The patient with the well-known changes in the apical region, which are interpreted as symptoms of incipient tuberculosis, is therefore not in need of any care unless he shows signs of activity, because these changes are always secondary and of no significance.

STAGES IN INFECTION

To understand the importance of Ranke's work, it must be remembered that the vital question, why in one case exudation predominates and in another proliferation, has been raised repeatedly for the past forty years, but no answer could be given. Still the answer was so simple that only a genius could see it. It has in fact been given by R. Koch himself, whose classical experiment showed that the reaction to the first infection is proliferative, whereas the anatomic tissue response to a reinfection is inflammatory. As Allen K. Krause puts it, "Proliferation is the essence of native tissue response, exudation the essence of allergic response." After the discovery by Pirquet of the allergic skin reaction the change in the tissue reaction to bacilli and bacilloproteins

attracted much more attention than the difference in the pathologic anatomic process. It was left to Ranke to recognize that the immunobiologic reaction and the pathomorphologic process are closely correlated and inseparably linked together, influencing each other to such an extent that it is not always possible to determine whether the anatomic process induces the corresponding phase of immunity, or vice versa. Or, in other words, whatever happens in and around the focus is the anatomic manifestation of the phase of immunity, and the degree of allergy is the immunobiologic manifestation of the pathomorphologic process.

First Stage.—Ranke originally distinguished three stages in tuberculosis, each one characterized by a different state of immunity and a different way of propagation of the infection. Ranke's first stage, that of the primary complex, which comprises the site of the primary infection and the regional lymph nodes, is marked by a profound modification—*allergy*—of all tissue cells after the first inoculation. The defense of the body against the first invading bacilli is markedly nonspecific and consists of mechanical defensive measures, which are always called into play against any irritating foreign body. To quote Krause: "The body treats the first bacilli as it would any foreign bodies, that is, it walls them off and sets them apart from normal tissue." Since the tubercle is avascular the infection at this stage is confined to the lymphatics and the infection can be propagated through the lymph vessels only. Pulmonary tuberculosis in its first stage is, therefore, a tuberculous lymphadenitis and the infecting bacilli are walled off within the lymphatics, from which they cannot escape, unless they break through the mechanical barrier, as, for example, when a caseated lymph node breaks into a blood vessel or into the bronchial tree.

Second Stage.—Ranke's second stage begins with the first reinoculation of the allergic body. All tissue cells have become sensitized to the infecting bacilli and their proteins. The tissue response is, therefore, prompt and intense, causing local and general allergic symptoms. Inflammatory changes consisting of hyperemia, engorgement of blood vessels, emigration of lymphocytes,



Fig. 4 (Case 1)—L. B., 19 years. Area of infiltration in the right upper lobe. Its densest portion in the subclavicular region, where a small cavity is formed. The right interlobar septum thickened.



Fig. 5.—November 11, 1928: Patient discharged. Regular refills given since then. Patient has gained twenty pounds and is free from all symptoms.

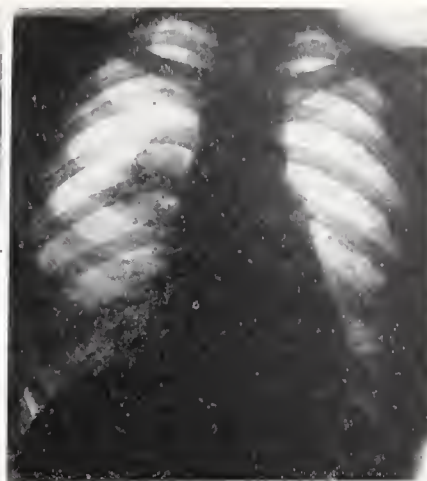


Fig. 6.—January 9, 1929: X-ray shows a complete compression of the right lung and obliteration of the cavity. The area of cavitation in the right upper lobe appears to be completely closed and fibrosed.

and so on, make up the anatomic picture of the focus of reinfection. General allergic symptoms may or may not be present, depending on the size of the focus and the intensity of the perifocal inflammation. During this stage infection spreads through the blood stream. Ranke's second stage, that of generalized tuberculosis, is therefore distinguished by hypersensitiveness to reinfection, by inflammatory tissue changes and distant hematogenous metastasis.

The third stage, the stage of isolated organ involvement, is characterized by a relative anergy and intracanalicular propagation. The disease is spreading by continuity and through the visceral ducts of the body.

The history of science teaches us that a genius often advances a theory which much later on is supported and proved correct. Thus, on the basis of Ranke's theory, the existence of nonapical infiltrations, accompanied by perifocal inflammation, could have been foreseen. If Ranke is correct in his conception of the development of pulmonary tuberculosis, any new focus, due to a superinfection, must of necessity be inflammatory and not proliferative in character, and can be located in any part of the lungs to which reinfecting bacilli can be brought by the inhaled air or carried by the lymph or blood stream from old deposits in the intrathoracic lymph nodes or other parts of the lungs. The fact that these lesions are usually found below the clavicle, toward the periphery of the lungs and nearer to the dorsal surface of the upper lobe—that is, in parts of the lungs which are supplied by the first main bronchus of the upper lobe—seems to indicate that in most of these cases we have to deal with aërogenic reinfections and not with metastasis through the blood or lymph stream.

SUPPORT OF RANKE'S THEORY BY REDEKER

According to Redeker and his followers, these infiltrations, which he calls early or incipient infiltrates, represent the first focus due to a superinfection. They are described as soft, cloudy, homogeneous shadows, the size of a cherry to that

of a plum, which are surrounded by normal lung tissue. The physical symptoms are usually very indefinite or entirely lacking. The only physical signs which occasionally can be elicited are a slightly impaired resonance and diminished breath sounds over a circumscribed area. The subjective symptoms are equally insignificant and indefinite. The patient may have very vague complaints or no symptoms at all. Sometimes a sudden hemorrhage or prolonged subfebrile temperature leads the patient to the dispensary or office. Very often a typical history of a cold or grippe of short duration is given. The German writers mention a moderate rise in temperature, an increased sedimentation to 12 and 16, and changes in the white blood picture, as the most constant objective symptoms. The onset of the early infiltrate is usually so insidious, and the objective and subjective symptoms so insignificant, that a diagnosis without fluoroscopy and good stereoscopic films is hardly possible. It is necessary to search for the early infiltrate, says Redeker, while the apical lesion forces itself upon the observer.

The early infiltrate, which is anatomically a tuberculous bronchopneumonia, in a small area can undergo various changes. The most favorable development is complete spontaneous retrogression. The infiltrates and the exudate may be absorbed in a short time, leaving no trace (Figs. 1 and 2.)

More often indurative changes set in and organization takes place with subsequent calcification, thus preserving on later films a very dense sharply outlined shadow at the site of the early infiltrate. (Fig. 3.)

The developments of the early infiltrate which lead to the acute and chronic forms of pulmonary tuberculosis are manifold and sometimes of a dramatic suddenness. We are dealing with a bronchopneumonic infiltration, surrounded by an area of perifocal inflammation, which is in no way walled off from the surrounding tissue and which has ample communication through bronchus, circulation, and lymphatics to other parts of the lungs, and any development is therefore



Fig. 7 (Case 2)—D. L., 38 years. Feb. 14, 1929: Hazy infiltration in the right upper lobe * just above and extending to the interlobar fissure. Apices clear: consistent with incomplete pneumonic consolidation.

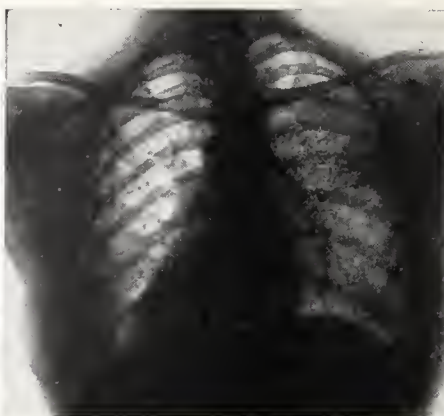


Fig. 8.—February 21, 1929: Dense diffuse infiltration in the right lung; most pronounced above the interlobar fissure. The involvement is similar in character to that of February 14, 1929, but more advanced, suggestive of a pneumonic type of tuberculosis.

* Acknowledgment is hereby made to Dr. R. A. Carter, roentgenologist of the Los Angeles General Hospital, for his assistance.

possible. The first crisis arises if the infiltrate progresses to caseation and then to softening and cavity formation. At that time an irregularly outlined kernel of deeper density can be made out on the film, which corresponds to the beginning demarcation of the caseated center, but even at that time the caseated focus can undergo induration. The stage of caseation is marked by increased allergic symptoms. The patient appears decidedly toxic, his temperature rises higher than in the initial stage, his pulse is rapid, and he gives the impression of being very sick and almost acutely shocked. The objective and subjective symptoms at the stage of caseation are altogether out of proportion to the insignificant physical findings. Only if softening and cavity formation takes place, the patient begins to cough and to expectorate, or he develops a dry cough if the perifocal inflammation reaches the pleura.

REPORT OF CASES

The following case came under our observation in the stage of beginning caseation.

CASE 1.—L. B., 19, white, female. Milliner. Admitted to hospital November 2, 1928, with moderate hemorrhage. Family history: Negative. Personal history: Usual childhood diseases; 1919 and 1929, flu. Cold three weeks ago. Since then loss of weight, lassitude, slight cough. On November 2, 1928, patient expectorated one glass of bright blood. On admission: Cough, headache, temperature 102. Physical examination was negative. Chest: Slight rigidity of right shoulder muscles; right apex slightly dull. Breath sounds—vocal and tactile fremitus—normal. Temperature from 98 in the morning to 102 in the afternoon. Pulse, 90 to 136. Respiration, 20 to 22. Blood: red cells, 3,820,000; hemoglobin, 58; white cells, 8400; lymphocytes, 32 per cent; polynuclear, 68 per cent. Urine was negative. Sputum, positive for blood, negative for cough. X-ray (Fig. 4).

Under rest and symptomatic treatment the hemoptysis stopped after two days. Temperature ranged between 100 and 102.

November 8, 1928: Artificial pneumothorax induced. Initial pressure, 5-2, 400 cc. air given. Final pressure, 4-1. November 9, 1928: Temperature normal, and remained normal since then. Patient feels well. First refill given. (Fig. 5.)

March 5, 1929: Patient has gained twenty-two pounds and is free from all symptoms. (Fig. 6.)

The fate of the patient at this critical period depends on the stabilization of his immunity. Marked hypersensitiveness will cause an extensive perifocal inflammation, which again will tend to accentuate the existing hypersensitiveness. One toxic shock then follows the other, the infiltration and the perifocal inflammation are rapidly extending, until the greater part of the whole lobe is involved. Thus we get the well-known clinical picture of the acute caseous lobe or caseous bronchopneumonia.

CASE 2.—D. L., 38 years, negro, female, married. Admitted to General Hospital, Los Angeles, February 13, 1929, for hemoptysis. Had had four hemorrhages on the day of admission—about one pint in all. Family history: Negative. Personal history: Two pregnancies fourteen and twelve years ago. No serious disease. Never coughed or spit up blood before. Flu one week ago. Since then cough and fatigue. On admission was well developed and well nourished. Temperature, 99.6; pulse, 80. Chest: Expansion equal; slightly impaired resonance over right upper lobe with rough breathing sounds. Urine was negative. Sputum, positive for acid-fast bacilli. Blood: hemoglobin, 85 per cent; white, 10,900; polynuclear, 82 per cent; lymphocytes, 18 per cent. (Figs. 7 and 8.)

COMMENT

It is the contention of the German writers that this malignant development can be prevented if the early infiltrate is diagnosed and artificial pneumothorax applied in time. If the early infiltrate does not show a tendency to spontaneous retrogression within a short time, artificial pneumothorax should be induced. This simple surgical procedure not only prevents a malignant acute form, but most probably saves the patient from a long chronic disease and years of suffering. Incidentally, it may be pointed out that pneumothorax at this early stage offers no difficulties at all. There are no adhesions, the pleura is normal and the lungs elastic, and small amounts of air will usually result in a good compression. The marked allergy very often subsides even without surgical interference, and at the same time indurative productive changes check the extension of the infiltration. The wall of the cavity becomes more resistant, the isolated round cavity has developed.

The second turning point in the life of the patient is the (most probably bronchogenic and not hematogenous) dissemination, which will manifest itself on the film by an increased cloudiness in the neighborhood of the infiltrate. In the cloudy area soon appear, under secondary allergic symptoms, more dense, oval shadows, which, however, do not resemble the well-known clover leaf spots, which are characteristic for the fully developed acinonodular tubercle. Redeker interprets these shadows as perifocal inflammations around minute new foci. For their origin by aspiration speaks the fact that the dissemination never appears in both lungs, which would be expected in hematogenous metastasis, and that the dissemination is first noticeable in the lower regions and in the area between the hilus and



Fig. 9.—March 23, 1928: Diffuse infiltration in the right upper lobe partially fibrosed with two small cavities.



Fig. 10.—January 18, 1929: Dense infiltration, giving the appearance of dense pneumonic tuberculosis involving the right upper lobe. Zone of infiltration projecting out to the left fourth interspace at about the mammillary line, enclosing a small cavity.

infiltrate, and much later in the upper region. The dissemination can disappear without leaving traces or undergo retrogressive changes.

At any time after the formation of the first early infiltrate a superinfection may lead, always under symptoms of hypersensitiveness, to the formation of another infiltrate similar in origin, structure, and development. Redeker uses the term "sister infiltrate" for these infiltrations that appear suddenly in heretofore healthy parts of the lungs and very often on the contralateral side. (Figs. 9 and 10.)

SUMMARY

Pulmonary tuberculosis in the adult develops, therefore, according to Redeker and his school, always from the early infiltrate and extends either through dissemination by aspiration or through the formation of new infiltrates, which are caused by superinfections, to other parts of the lungs until the apical regions are involved. Thus we get the well-known clinical and x-ray picture of the chronic fibrocaseous ulcerative tuberculosis, with late and secondary changes in the apices.

The discovery of the early infiltrate is of great importance because it means that pulmonary tuberculosis very often begins in a region where it cannot be diagnosed by our methods of physical examination. Diagnosis in many cases comes too late; that is, when the tuberculous process has already spread to parts of the lungs which are accessible to auscultation and percussion. Our treatment very often sets in after the patient has already overcome the most critical period of his disease. Since success or failure of treatment and of all preventive measures depend, primarily, on our ability to diagnose the onset of pulmonary tuberculosis and to treat and to separate potential sources of infection, it follows that we shall have to use serial and regular x-ray examination as a routine method in the office and dispensary. As to therapy, the one conclusion that can be drawn at the present time is that, in the treatment of early infiltrates which do not undergo spontaneous retrogression or which show a tendency to progression, surgical measures (phrenic-

otomy or artificial pneumothorax) should be applied at an early date.

1052 West Sixth Street.

REFERENCES

Fishberg, M.: *Sur. Rev. of Tub.*, January 1928.

Wessler and Jaches: *Diseases of the Chest*.

Redeker, Franz, and Walter, Otto: *Entstehung und Entwicklung der Lungenschwindsucht des Erwachsenen*. Leipzig, 1928.

For further references, see Redeker and Fishberg.

DISCUSSION

CHARLES C. BROWNING, M. D. (711 Merritt Building, Los Angeles).—Doctor Fischel has presented a valuable discussion of his subject, although I am unable fully to endorse all of his conclusions.

Primary infection may occur in different tissues of the body and if the primary infection is in the lung it may take place in any portion of the lung. Regional lymph node infections frequently occur as an immediate result of the primary infection. Most frequently these infections produce no symptoms, the amount of infectious material being insufficient. However, sensitization has occurred and later infections are more frequently followed by manifest symptoms, this again depending upon the degree of infection. Evidence exists that later infections may be exogenous or endogenous, probably more frequently the latter. These may also occur in any portion of the lung.

Doctor Fischel has called attention to the difficulties of early diagnosis of existing activity in some cases because it may "begin in a region where it cannot be diagnosed by our methods of physical examination." It is important to bear this in mind and in doubtful cases to keep the patient under observation for sufficient time to allow changes to occur which will permit a diagnosis of active tuberculosis or render it quite improbable that such exists.

When we recall that lymph nodes are frequently involved in the earlier infections; that many of these exist in the mediastinal, peritracheal and peribronchial areas; that the changes taking place in these produce few symptoms or signs, even by x-ray, until the elapse of considerable time; and that dissemination of infection from these areas is not infrequent, we are justified in making frequent examinations, including the use of the x-ray and tuberculin test. Negative x-ray should not be given too great consideration in the presence of suspicious symptoms, nor should negative tuberculin test, especially in the presence of anemic conditions.

✂

F. M. POTTINGER, M. D. (Monrovia).—Doctor Fischel has given a very interesting discussion of Redeker's theory of the nonapical localization of tuberculosis of the chronic type.

Redeker presumes a previously infected immunized host which suddenly finds itself reacting to moderately large reinoculating doses of bacilli. He assumes that the reinoculating bacilli are probably of exogenous origin. It is his contention that the first reinoculation takes place below the clavicle and that if the apex becomes involved it does so as a later extension. Distinct apical lesions, in contrast to the subclavicular ones, are supposed to be benign.

We have long taught that tuberculosis does not necessarily begin at the apex. We know that the primary focus can be found in any portion of the lung, as was so well shown by the work of Ghon, and as may be verified by finding calcified deposits in all parts of lungs of small children. Where the reinocu-

lation which starts the chronic disease shall take place has always seemed to me to be more or less accidental. Though favoring the upper half or third of the lung, we also find it toward the base.

It would be a mistake to accept this work of Redeker as establishing a particular form of tuberculosis or furnishing a proven rule for reinfection until it has received more study and more definite proof. Where serial examinations are made of chests at frequent intervals, as has been done in certain welfare clinics, it is surprising to see how at one time a fairly diffuse mildly exudative lesion will be found, unknown to the patient, which will undergo such complete resolution that it may not be found after a few months' time. A similar lesion in other instances may go on to an extensive active process. We assume that when the first type of lesion heals, as it often does by resolution, bacilli remain in the tissues, even though the x-ray fails to show traces of the process. Should a reinoculation take place in these areas it would be impossible to determine by any method that we now possess that the lesion was not a reactivation of the preceding infection. An endogenous source of infection seems to me to be far more probable than an exogenous.

I fear that the effect of the teaching that an apical lesion is a benign one is harmful. A mild apical lesion, in my experience, is a potential severe lesion and should be treated with utmost respect until healed.

I cannot believe that there is any difference in the process of healing according to the location of the lesion, except the difference in tissue in different locations and the difference in the mechanics of the respiratory mechanism. The same immunity reaction determines the outcome in all instances. It is well to have this subject presented to us that it may be thoroughly discussed.

✽

MAX ROTHSCHILD, M. D. (384 Post Street, San Francisco).—The important fact which is brought out in Doctor Fischel's excellent and interesting paper is, from a practical standpoint, his statement that in many cases the diagnosis of pulmonary tuberculosis is not made until the tuberculous process has already advanced. We have all seen a good many cases where the process does not involve the apices, but other parts of the lung, especially the infraclavicular area. In the great majority of cases, however, we hear the first abnormal breath sounds in the apices, notwithstanding Redeker's publications in this respect. I must agree with Doctor Pottenger that these apical involvements must not be underestimated, as they are by no means harmless.

If we look back on the continual changes in our viewpoints about many questions regarding tuberculous infections, not alone covering the primary foci and the spreading of the disease, but also covering questions of immunity, allergy or anergy, even classification, be it from a clinical or pathological standpoint, and especially treatment, we must admit that there exist possibilities for much confusion.

When it comes to the most important and practical question of all—that of the earliest possible diagnosis—I believe the correct immunobiological tests help us more than any physical or x-ray examinations, especially if at the same time we consider carefully the history of the patient and the subjective symptoms, which are usually so typical in the absence of other pathological conditions. At the height of a reaction, after such immunobiological tests, we notice a focal reaction in one of the apices more frequently than in all the other parts of the lungs combined.

✽

DOCTOR FISCHEL (Closing).—It was hardly possible to explain in a short paper the importance of Redeker's work, which has caused a more heated discussion in the German literature than any other discovery in the past two decades.

Redeker's views are supported by so much convincing evidence that they cannot be ignored. The subject should be discussed thoroughly, and I agree

with Doctor Pottenger that we should wait for more definite proof before we accept the newer teachings.

Redeker's theory may explain two very amazing facts which so far have received very little attention. One to which Douglas, Pinner, and Wolper (*American Review of Tuberculosis*, February 1929) call our attention is the small number of incipient cases, or rather cases with minimal lesions, which come under our observation in striking contrast to the numerous far-advanced cases which fill our sanatoria both private and public. The majority of patients with progressive and destructive pulmonary tuberculosis reach the far-advanced stage apparently in a much shorter time than could be expected if tuberculosis as a rule begins at the apex and spreads slowly and gradually toward the base. The discovery of the early infiltrate (regardless of its localization) with its sudden onset, its indefinite symptoms and its various developments, is so important because it demonstrates the difficulties of an early diagnosis and at the same time the necessity of immediate diagnosis and treatment. The fate of the patient is decided in a very short time and quite often, as in Case 2, the patient is in a far-advanced stage before the serious and progressive character of his disease is recognized.

The second fact is our inability to prevent in a great number of cases the development of a progressive form, and of tertiary chronic tuberculosis. Tuberculosis is compared with other pulmonary infections caused by low-grade infection which give us ample time to intervene. Nevertheless, with all our refined and super-refined diagnostic methods, the results obtained by early and often prolonged institutional treatment by specific therapy and surgical methods are very often more a prolongation of life and not a complete cure, and the questions therefore arise, Is our therapy in fact early treatment? Do we get the patient in the incipient stage of tuberculosis? Does not the early infiltrate, with its frequent rapid extension, necessitate a more energetic treatment during the allergic phase by phrenicotomy or early pneumothorax?

I fully agree with Doctors Rothschild and Pottenger that the apical involvement should not be underestimated. Benign as the apical lesion may be, it can always be the potential source of an endogenous reinoculation and should, therefore, be treated as long as constitutional symptoms are present.

COMBATING CONGENITAL SYPHILIS*

RECOGNITION AND TREATMENT OF THE DISEASE

By LLOYD B. DICKEY, M.D.

AND

T. LEONARD SUTTON, M.D.

San Francisco

DISCUSSION by Donald K. Woods, M.D., San Diego; H. J. Templeton, M.D., Oakland; Phillip E. Rothman, M.D., Los Angeles.

IN the last decade the number of children suffering from congenital syphilis, seen by the practicing physician, has probably decreased considerably. This lessened incidence, if it occurs, can be explained by the fight against the disease in potential parents, by the increased knowledge the laity possesses in regard to the prophylaxis of syphilis, and by the marked extension of the work in prenatal clinics among the type of patients through which congenital syphilis is more often transmitted.

In the past three years, among about 5500 new

* From the Department of Pediatrics, Stanford University School of Medicine, San Francisco.

* Read before the Regional Social Hygiene Conference at San Francisco, June 24, 1929.

patients who have come under our observation in a children's clinic practice, we have seen 103 cases diagnosed as having congenital syphilis. This makes the incidence of the disease very slightly less than 2 per cent for California children residing in the vicinity of San Francisco.

The fact that today nearly one out of every fifty children in clinic practice has visited upon him the sins of a previous generation shows that the problems of prenatal and of infant treatment are still important ones in social hygiene. One needs but to undertake the medical care of this distressing heritage of adversity in later childhood to appreciate fully the importance of early treatment in adult syphilis, and in the newly born of untreated adults.

RECOGNITION OF THE DISEASE

There are essentially three important aids in the diagnosis of congenital syphilis—the family history, the clinical evidence of the disease, and the serologic reactions.

If there is elicited a history in the mother of repeated spontaneous miscarriages, premature births, or stillbirths, syphilis should be suspected in the offspring. This disease is still probably the commonest single cause of fetal mortality, and a very common factor in the prematurity of infants. Of course, with the actual presence of syphilis established in the mother or father, the possibility of the disease in the children is obvious, and search must be made for it.

In most children's clinics it is neither practical nor possible to make the specific laboratory tests for the disease on every patient coming under observation, so those who are likely to see the disease must become familiar with the signs and symptoms or the absolute indications for making the tests that confirm the provisional diagnosis of syphilis.

SYMPTOMS AND LESIONS IN CONGENITAL SYPHILIS

The symptoms and lesions in congenital syphilis are many; the symptoms occurring in the disease may be due to other conditions, but the lesions themselves are usually characteristic. The presence of what conditions should lead one to suspect that a child is suffering from syphilis? An analysis of the findings in our series may help in answering this question.

Of the 103 cases in which we have had an opportunity to observe the presenting symptoms, forty-six were newly born infants. In thirty-one of these there was no clinical evidence of syphilis, the diagnosis being made on a history of infection in the mother, and a positive Wassermann reaction in the blood of the infant. This combination occurred in each of the thirty-one infants so diagnosed.

Of the fifteen infants with clinical evidence of syphilis eight presented only a single symptom. In three this single symptom was marked nasal discharge, or snuffles; in one bleeding from the umbilicus occurred; in another congenital heart disease was the only finding. In one pair of twins

prematurity occurred without other clinical evidence, and it was also evident in four of the infants who presented other findings. Scaly skin was seen in one newly born infant with no other symptom, but this sign occurred in three others with multiple lesions. Other findings noted among the newly born infants were a palpable spleen, two infants with mild hydrocephalus, two with secondary anemia, two with fissures, one with large blebs, and one with hemorrhages in the skin. In seven newly borns only, then, were multiple evidences of clinical syphilis recorded.

Twelve infants were observed between the ages of one and eighteen months, and one of these was free of symptoms. Of the total there were six that showed but a single symptom; one had a frontal bone gumma, two an epiphysitis (with a pseudoparalysis of the arm), and three had snuffles only. Among four in this group showing multiple lesions, there were two cases each of snuffles, palpable spleen, scaly skin, maculopapular rash, and anemia, and two were markedly underweight. There was one example each of mild hydrocephalus, fissures, and mucous patches.

LESIONS IN LATER CHILDHOOD

The children in later childhood, forty-five in number in this series, showed the greatest variety and multiplicity of lesions, as would be expected. This is the group, that, because of lack of specific treatment in infancy, show the distressing and debilitating lesions. In only eight of this group was the treatment of syphilis begun because of the history in the mother and a positive Wassermann reaction obtained from the blood of the patient. In five children there was a single presenting symptom; in two this symptom was markedly carious teeth; in each of three others, nasal atresia, frequent nose-bleeds, and an infection of the lacrymal sac were noted. In thirty-two patients, or approximately 75 per cent of this group in which treatment was delayed until infancy had passed, multiple lesions occurred, in many causing deformities and irreparable damage to the mentality and vision, and fastening on them for life the stigmata of the disease. The most constant symptom in this group was defective vision; fourteen of the thirty-two patients, or 43 per cent, had lesions which resulted in impairment of sight. Eight had corneal opacities (interstitial keratitis), and there were seven cases of strabismus, five of chorioretinitis, four of optic atrophy, two of iridocyclitis, and two with defective pupillary reaction.

There were eight children in this group who were mentally deficient, and others with subnormal intelligence quotients. Three were juvenile delinquents, and five had speech defects. Eight patients showed general adenopathy, and eight markedly carious teeth. There were six cases showing typical Hutchinson's teeth, and five others with atypical forms of enamel deficiency. Five patients showed thickening of the bone cortex of one or both tibiae (saber-shins). There were four cases each of marked underweight, of palpable spleen, and of nasal obstruction with atresia; three cases each of enlarged liver, hemi-

plegia, and mild hydrocephalus. Two patients in this group had frequent epistaxis, and two were deaf-mutes. There was a single instance each of vitiligo, tenosynovitis, laryngitis, congenital heart disease, hypoplastic finger nails, rhagades, indolent ulcers, Fröhlich's syndrome, and hydrarthrosis (the last mentioned case with a positive Wassermann reaction from fluid from the knee). Of such a commonly mentioned condition in the textbooks as Hutchinson's triad there was only a single instance. Of typical Moon molars and Carabelli's tubercle there were none seen, although careful search was made for these signs. In our entire series of 103 cases there was not an example of any congenital malformation (except a single case of congenital heart disease) such as the laity commonly associate with syphilis. An entire absence of cases of infection of the heart was noted, and no cases of aortitis were diagnosed, although a considerable number of roentgenographs of the chests were taken on the older children.

BLOOD WASSERMANN REACTION

The blood Wassermann reaction was positive some time during the course of the disease in 101 of our patients. In one of the two infants with a negative blood Wassermann the spinal fluid was positive in a one-year-old girl with convulsions and epileptic attacks. The other case was an infant having a negative blood Wassermann reaction, but born with large bullae, and with a family history of syphilis, the mother having a positive blood Wassermann reaction at the time of the infant's birth. The lesions of this patient healed at once on the usual treatment.

In none of the forty-six newly born infants was the spinal fluid examined until after the blood Wassermann reaction had become negative, and in none of the sixteen in which it was analyzed was the Wassermann reaction positive. Of the twelve older infants, spinal fluid tests were performed in eight patients, and in three of these, or thirty-seven and one-half per cent, the Wassermann reaction was positive. A paretic colloidal gold curve was obtained in one of these infants with a negative spinal fluid Wassermann reaction, but with a positive reaction in the blood. Twenty-five of the forty-five older children submitted to spinal punctures, and in six, or twenty-four per cent, a positive Wassermann reaction was obtained. In one of the six there was a paretic colloidal gold curve, and another had the symptoms of paresis with a suggestive curve.

TABLE 1.—Shows Incidence of Race in Mothers of Patients

American	42
Mexican, Spanish, Portuguese	23
Filipino	8
Negro	5
Chinese	5
Russian	4
Italian	3
Danish	3
Japanese	3
Greek	2
French	2

THE PROPHYLACTIC TREATMENT

The general prophylaxis of congenital syphilis is intimately related to the educational, social, and medical control of the transmission of adult

syphilis. Adequate treatment of infected adults who are potential parents also goes far toward limiting the incidence in children. Treatment of pregnant women with syphilis not only lessens the number of miscarriages and spontaneous abortions, but also often makes possible the birth of an uninfected baby. This prenatal treatment also minimizes the severity of the fetal infection, and allows for an easier cure by regular therapy in early infancy. Dr. H. E. Alderson, in the Stanford Medical School clinic for dermatology and syphilis, has found, in the treatment there of syphilis in pregnant women, that therapy started before the third month of gestation, and adequately followed, results in practically all of the offspring being born free of the disease. If the treatment be started by the fifth month, it may result in having infants born free of syphilis, but such chances are diminished if treatment is delayed after this time.

THE TREATMENT OF INFANTS AND CHILDREN

The literature on this whole subject is voluminous. For an excellent review the reader is referred to an article by McBride.¹ Schussler² in 1925 reported the results of intensive intravenous therapy of congenital syphilis in Stanford clinic.

Arsenic in some form is properly considered the most important single item in the list of anti-syphilitics in current usage. Sulpharsphenamin was chosen as the form of arsenical for treating congenital syphilis in our patients. It has a slightly higher arsenic content than neoarsphenamin, it is probably a more potent antiluetic preparation, and it may be given intramuscularly with little irritation, thereby greatly facilitating the process of administration. We have, however, used sulpharsphenamin intravenously in the treatment of a few of the Wassermann-fast cases in later childhood. This was done because there had been much medicine deposited, with trauma resulting to the gluteal muscles, rather than because of the belief that the intravenous administration itself heightened the therapeutic effect of the drug. It should not be used in any form, however, in beginning the antiluetic treatment when severe eye inflammations are present, or in case of optic atrophy.

Mercury and *bismuth* are valuable metals in the treatment of syphilis, and should be employed. We have used mercury in the form of mercuric chlorid, and bismuth as bismuth phenylformitate, both suspended in oily bases. Mercury ointments have been given for rubs. *Potassium iodid* has been used routinely in most of the older children. It is thought advisable to push mercury medication when eye or bone lesions are present.

DOSAGE

Sulpharsphenamin.—In infants we began treatment with fifteen milligrams per kilogram of body weight, and increased to thirty milligrams during the first eight injections. In older children rapid

fractional increases to fifteen or twenty milligrams per kilogram of body weight were used.

Bismuth.—Fifteen milligrams per kilogram of body weight of the bismuth phenylformitate were used in infancy. Doses proportional to the child-adult weight ratio were used in older children.

Mercury.—Of this metal, five milligrams per kilogram of body weight was used, in the form of mercuric chlorid, for treating infants, while for older children the dosage was made proportional to the child-adult weight ratio.

Potassium Iodid.—We employed one drop of the saturated solution per year of age, three times a day, by mouth.

With the previously mentioned exceptions, all medication has been given intramuscularly. The technique of gluteal injections is of considerable importance in the avoidance of complications of treatment. Skin puncture should be made with the patient prone, and within the upper and outer quadrant of the rounded buttock. One should be sure the needle end is well within the muscle, though touching bone or injecting near periosteum is to be avoided, as is deposition in the subcutaneous tissues. The latter may cause considerable fat necrosis. Before injecting the oily suspensions it is well to insert the unattached needle and to wait a few moments, to be sure that a vascular channel has not been entered. All intramuscular injections should be given slowly so that the tissues are not ruptured. They should also be followed at the end by the introduction of a small amount of air to empty the needle, which should then be withdrawn slowly while pressure from the side is made to assist in closing the needle tract properly. Alternate sides should be used for successive injections.

Leading authorities advocate continuous intensive treatment of syphilis and results justify this type of therapy. Our plan has consisted of treatments twice weekly, including eight injections of sulpharsphenamin, eight of bismuth, and eight mercury rubs given at home, which completes one course. On the return from the four weeks at home, after the rub period, the blood Wassermann reaction is rechecked and the second course begun. No patient is dismissed as temporarily cured (i. e., for semiannual or annual checks on the blood Wassermann reaction) until there have been two successive negative blood tests and a negative spinal fluid examination reported.

As in other series of clinic syphilitics, the difficulty of convincing the parents of the importance of this treatment routine, in spite of the child's reluctance, is quite apparent in a comparison of the number of cases seen with those adequately treated. This discrepancy is also augmented by the fact that many of the families moved to unknown places during the course of treatment. The solution of such problems is chiefly in the domain of the public health nurse and other workers in social hygiene, and the importance of their solution cannot be overemphasized. The problems are related to education of the parents, and to careful follow-up work by social service workers. Our work should not be considered as even near-

ing success until the number of adequately treated cases approaches those originally seen.

TABLE 2.—Shows Results of Treatment

Newly Borns.	
Total treated	25
Negative after 1 course.....	24
Negative after 2 courses	1
Infants.	
Total treated	6
Negative after 1 course	0
Lost after 1 course	2
Lost after 2 courses	3
Lost after 3 courses	1
Children.	
Total treated	26
Negative after 1 course	4
Still treating after 1 course	4
Negative after two courses	1
Lost before completing 2 courses	7
Still treating after second course	3
Negative after 3 courses	1
Negative after 4 courses	1
Lost after 4 courses.....	1
Still treating after 5 courses	3
Negative after 6 courses	1

Table 2 indicates that the establishment of negative blood Wassermann reactions is accomplished without difficulty in infants when treatment is started in the newly born period. This emphasizes the importance of diagnosis at birth, or in the mother during the prenatal period. Many, but not nearly all, of the mothers of these infants had a moderate amount of treatment during their pregnancies.

None of our cases in later infancy were adequately treated. We found that the type of parent who would allow the disease to become well advanced before seeking treatment, was not the type who would be properly enthusiastic for the necessary continuance of treatment.

Of the fifteen cases fairly adequately treated in later childhood, four were negative after one course, four others negative after two, three, four, and six courses. Six might be classed as Wassermann-fast, though two of these had most of their treatment elsewhere, and four are serologically improved, two markedly so.

In no case under treatment did the signs or symptoms of syphilis become worse.

Of the nine cases with central nervous system infection three were adequately treated, the others being lost, or having only recently come under observation. None of the three had serological or clinical evidence of either tabes or paresis, but in all the spinal fluid tests became completely normal as the result of systemic treatment alone. It is certain, however, that many children with central nervous system infections would require intraspinous treatment if hope were to be had for improvement.

The removal of such focal infections as infected tonsils and decayed teeth probably enhances the value of the drugs in treatment. This fact should constantly be borne in mind, and patients should be frequently examined, as they are probably more subject than normal children to other forms of disease.

COMPLICATIONS OF TREATMENT

Some of the complications of treatment were the direct result of improper therapeutic technique. One needle was broken off within the buttock, necessitating incision for successful removal.

Six abscesses or moderate-sized areas of inflammatory induration developed. Two occurred in the newly born group, one of which was incised and a bismuth sinus established which required later surgical incision and curettage under general anesthesia. The other broke through the skin spontaneously, discharged and healed after one month. Four occurred in older children, three subsiding with compresses (sterile pus obtained by needle from one). One was opened, pus showed no growth on culture, and healing rapidly ensued. Two of the total of six such reactions followed mercury injections, the remainder (the more severe ones) occurred immediately after sulpharsphenamin injections, following a bismuth course.

Two cases developed mild gingivitis; one followed bismuth, but showed no bismuth line; the other followed eight mercury and eight bismuth injections. In the latter instance there was a moderate bluish discoloration of the lower anterior gums.

Seven patients evidenced a toxic reaction to sulpharsphenamin. There were two mild cases of dermatitis not generalized, and two of mild generalized dermatitis with very slight exfoliation, one of these having two attacks. There was one case of severe dermatitis with fever, swelling of the eyes, and a moderate amount of pus in the urine, and another instance of severe dermatitis with marked exfoliation, and moderate fever. The seventh patient was the only infant showing a reaction. This baby developed a mild dermatitis (without exfoliation) after six injections of sulpharsphenamin, had fever of 102 degrees, became drowsy, and developed twitchings. Fluids were forced parenterally and by mouth, sodium thio-sulphate was given by mouth and intravenously. The baby was well in ten days. All of these cases, except the last, were later given sulpharsphenamin without further difficulty, although such reactions are considered by many to contraindicate the further use of any arsenical or, at least, the form responsible for the toxic action.

The following table lists the mortality which occurred in this series:

TABLE 3.—Mortality

Case No.	Age	Cause of Death	Length of Time After Injections	
			First	Last
1	10 hours	Subdural hemorrhage	No treatment	
2	14 days	Unknown (bronchopneumonia?)	12 days	4 days
3	22 days	Unknown (possible sulpharsphenamin reaction)	15 days	2 days
4	24 days	Prematurity	3 days	3 days
5	8 weeks	Membranous enteritis	13 days	2 days
		Empyema, streptococci		
		Subdiaphragmatic abscess	3 mos.	1 mo.
		Otitis media		
6	3 mos.	Bronchopneumonia	4½ mos.	1 mo.
		Pseudoleukemic anemia, infantum		
7	5 mos.	Bronchopneumonia	5½ mos.	1 week
8	5½ mos.	Bronchopneumonia	4 mos.	2 weeks
9	9 mos.	Bronchopneumonia	2 year:	15 days
10	2 years	Septicemia, nonhemolytic streptococci		
		Mastoiditis		

CONCLUSIONS

1. Individuals with congenital syphilis still constitute about 2 per cent of those seen in a children's clinic practice.

2. The important aids in diagnosis are the family history, the clinical evidence, and the serological reactions.

3. Many infants with a history of syphilis in the mother, and with a positive blood Wassermann reaction, present no signs. These patients should be treated the same as if lesions were obvious.

4. In our series snuffles, eye lesions, dental defects, and mental deficiency were common; saber-shins, nasal atresia, and nose-bleeds were relatively common; heart disease and Hutchinson's triad were rare; Moon molars, Carabelli tubercles, aortitis, and congenital anomalies commonly associated with syphilis (by the laity) occurred in none.

5. A combination of sulpharsphenamin, bismuth, and mercury, in relatively large doses given twice weekly offers a rapid serologic cure in practically all infants.

6. The disease in a fair proportion of older patients yields to similar therapy. The percentage of cures in this group would be increased by intensive work in social service.

7. Most severe complications of treatment may be avoided by careful attention to technique and dosage.

8. The mortality in our series was about ten per cent. The immediate cause of death was not related to the treatment except possibly in one case.

Stanford University Medical School.

REFERENCES

1. McBride, R. H.: Review of the Literature on Syphilis, *Amer. J. Dis. Child.*, 32:105, 258, 1926.
2. Schussler, H., Jr.: Intensive Treatment of Congenital Syphilis, *Calif. and West. Med.*, 23:446, April 1925.

DISCUSSION

DONALD K. WOODS, M.D. (Fifth and Laurel Streets, San Diego).—The paper by Doctor Dickey and Doctor Sutton is of particular value because of the brief and specific account of the therapy and results in the cases which they handled. Too many papers are rather indefinite on these points and are, therefore, of doubtful value to the average man. I believe that their report of finding one out of every fifty clinic cases infected with syphilis should call our attention to the necessity of routine Wassermann tests on all clinic cases. It also seems to me that the same supervision should be given to a chronic contagious case as to an acute one. I believe the day is not far distant when isolation and cure of these cases will be demanded.

I believe the paper indicates that cure is possible where the cases are kept under observation. The welfare of the individual and of the race demand that this continued treatment be made an obligation to extend until a clinical cure is obtained. The greatest mistake in handling syphilis in children is emphasized by this splendid paper—that is, medication is given in inadequate dosage, and there is a failure to persist in the treatment until the clinical and serologic cure is made certain.

I do not think we need to change our treatment of this disease at present unless some valuable addition is made through research. With the drugs and expe-

rience we have, cures can be produced in practically every case if the two principles emphasized in this paper are followed, namely, adequate dosage and continued medication.

✽

H. J. TEMPLETON, M.D. (3115 Webster Street, Oakland).—The clinics of the Baby Hospital in Oakland are devoted exclusively to the care of children and infants. The only exception to this rule is that the syphilis clinic treats all of the syphilitic pregnant women seen by the obstetrical department. This is done because we feel that the golden hour of opportunity for treating congenital syphilis is throughout the entire pregnancy of the syphilitic mother.

We have given these pregnant women rather long courses of neoarsphenamin and short courses of bismuth or mercury, believing that the arsenicals are less nephrotoxic than are the heavy metals. We aim to so adjust our courses as to have our last course of neoarsphenamin extend throughout the last two months of pregnancy. For it is at this time that the energetic spirocheticidal action of the arsenical is especially needed. Although our series is small, we have not seen evidences of syphilis in any of the infants born of our adequately treated syphilitic mothers.

We believe that bismuth is of great value in combating congenital syphilis, and have had one striking example of its efficacy. A group of six children had received long-continued treatment with sulpharsphenamin and mercury and had remained Wassermann positive. They could be classified as "Wassermann-fast." They were all then given a course of ten injections of potassium bismuth tartrate at the end of which course all had become Wassermann negative. We do not deduce from this striking result the fact that bismuth is equal to sulpharsphenamin, but rather that it is of great value in those cases in which the spirochetes have become arsenic resistant. We believe that alternating courses of mercury, arsenic, and bismuth should be given, thus attacking the spirochetes through their different chemoreceptors.

We used some bismudol in our clinic, but abandoned it because of its extremely slow rate of absorption. The buttocks of six children who had received it were x-rayed and very little evidence of absorption could be found after 5, 49, 161, 161, 175, and 386 days, respectively. Most of our work has been done with potassium bismuth tartrate.

✽

PHILLIP E. ROTHMAN, M.D. (833 Pacific Mutual Building, Los Angeles).—Doctor Dickey's and Doctor Sutton's excellent results with sulpharsphenamin lend additional evidence to the previous reports of the efficacy of this drug in the treatment of prenatal lues. It has long been known that arsenic is well tolerated by children. Nevertheless, occasional cases of dermatitis are seen and at least one case is on record of a child who developed granulocytic aplasia of the bone marrow with purpuric manifestations and subsequent death following the use of sulpharsphenamin. In 1925 a new arsphenamin synthetic, bismuth arsphenamin sulphonate, was introduced by Dr. George Raiziss and has been used at the suggestion of Doctor Chambers in the Children's Hospital of Los Angeles for over a year. The results will be published later, and although it is far too early to establish any final conclusions, the clinical and serologic results to date are superior to other methods of treatment. Moreover, no cases have been recorded in children of severe anemia, dermatitis exfoliativa, or hemorrhagic encephalitis, following the use of this drug. The dosage has been worked out clinically as follows: Birth to six weeks, .005 gram; six weeks to one year, .05 gram; one year to two years, .1 gram; two years to fourteen years, .2 gram. It is administered once weekly up to the age of three months and twice weekly thereafter. One course consists of twenty injections and is followed by a two weeks' rest period. Local abscesses have occurred with about the same frequency, as in sulpharsphenamin administration. Nitritoid crises have been easily controlled with the

so-called Bezredka plan. This consists in administering 1/300 grain of atropin sulphate subcutaneously to susceptible children. Twenty minutes later one-tenth of the total dose of arsphenamin used is injected and after a similar interval of time the rest of the drug is given.

The authors were fortunate in being able to re-administer arsenic to those patients who manifested a toxic reaction, particularly a dermatitis. This procedure is not without danger, especially in those individuals with dermatitis exfoliativa of the edematous type. Not always, but occasionally, even the most minute amount of arsenic will provoke a severe exacerbation.

It has been repeatedly demonstrated that the best therapeutic results are obtained in the patients who are treated as soon after birth as possible. Since the Wassermann reaction is occasionally negative during the first few months, a positive diagnosis can often be made during this period by the radiographic appearance of the long bones. The shadows are absolutely characteristic and should not be confused with rickets, scurvy, or tuberculosis. If positive x-ray evidence of lues is present, treatment should be instituted regardless of the outcome of the Wassermann test.

THE ROENTGEN RAY IN THE DIAGNOSIS OF PRIMARY CARCINOMA OF THE LUNG*

By B. R. KIRKLIN, M. D.

Rochester, Minnesota

ALTHOUGH primary carcinoma of the lung is not a common disease, it has been discussed extensively in the literature. Adler's monograph in 1912, which was a masterly review of 374 cases from the records, aroused wide interest and stimulated further publications. Admitting the relative rarity of the disease, there is reason to believe that its incidence is increasing. Certainly broadened clinical knowledge, the employment of the roentgen ray as a routine, and the application of bronchoscopy have combined in the discovery of a greater proportion of cases. At all events, the lesion occurs with sufficient frequency to warrant its consideration in every roentgenologic examination of the chest or, at least, when the manifestations are not typical of other disease. As indicative of its frequency, it may be noted that during the last four years the diagnosis of primary carcinoma of the lung was made in eighty-five cases observed at The Mayo Clinic. Diagnostic proof in these cases rested variously on necropsy data, tissue removed at bronchoscopy, and clinical and roentgenologic data.

From the standpoint of morbid anatomy, four types of the disease are commonly recognized: nodular, lobar or diffuse, infiltrating and miliary. This classification is somewhat incongruous in that it is based variously on the situation of the foci and on their number, form and definition. Further, multiple nodular and miliary varieties are produced by metastasis and are complications rather than types. Inasmuch as the primary growth arises either in the parenchyma or in a

* Read before the Radiology Section of the California Medical Association at the Fifty-Eighth Annual Session, May 6-9, 1929.

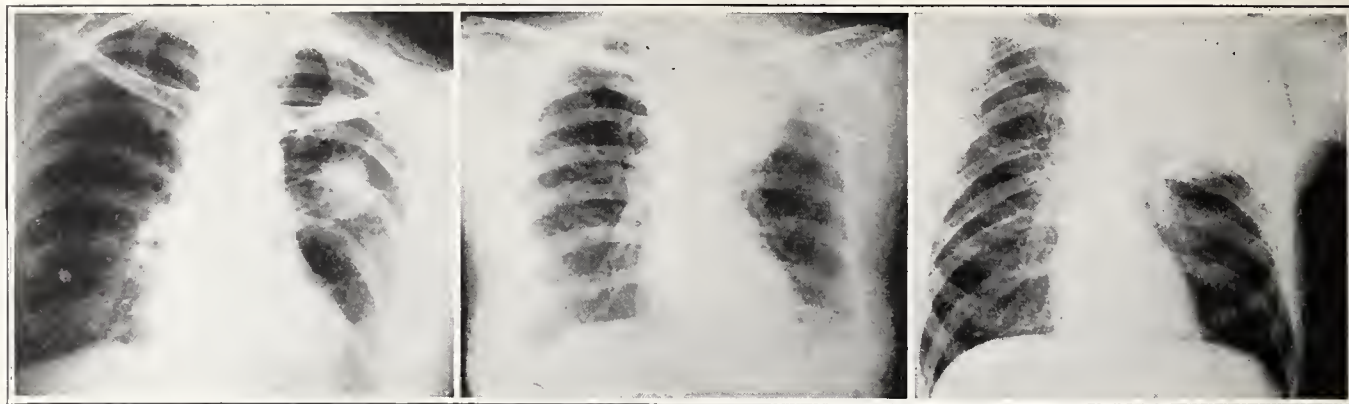


Fig. 1.—Early primary nodular carcinoma in parenchyma of left lung, with metastasis to brain.

Fig. 2.—Large nodular malignant growth of left upper lobe.

Fig. 3.—Large primary malignant growth involving left upper lobe with erosion into bronchus. The patient coughed up tissue which proved to be highly malignant carcinoma.

bronchus, it is more convenient from the roentgenologic viewpoint to recognize only two main varieties, the parenchymal and the bronchial. Histologically the growths comprise adenocarcinomas, highly undifferentiated or medullary carcinomas, and simple or squamous-cell epitheliomas. Complications, which are common and affect the roentgenologic picture, include metastasis to other parts of the lung, vascular congestion, atelectasis, bronchiectasis due to filling of the bronchi with blood or secretions, accumulation of fluid in the pleura, infection resulting in abscess, and central necrosis causing cavitation.

SYMPTOMS OF CARCINOMA OF THE LUNG

The principal symptoms of primary carcinoma of the lung are cough, either dry or productive, hemoptysis, pain, dyspnea, and loss of weight.³ These are encountered in diverse combinations and degrees of severity, depending on the duration of the disease and its site (bronchial or parenchymal). In the earlier stages the clinical picture of the two main types is more constant. Cough is especially harassing and persistent in the bronchial type, and although sputum is seldom profuse it is usually present and commonly blood-tinged. Approximately half of the patients with bronchial carcinoma have complained of dyspnea; in some cases the dyspnea is very distressing and apparently out of proportion to the amount of lung affected by the lesion. Loss of weight is relatively constant and although pain is usually present it seems to be complained of less than the cough. About a third of the patients with bronchial malignancy had had fever, apparently due to secondary infection, and a few had complained of hoarseness. The most common physical sign in the bronchial type is partial or complete stenosis of the bronchus. Pleural effusion will be found in the late cases when the disease attacks the pleura, and leukocytosis will be manifest if secondary infection occurs. Metastasis to bones, cervical lymph nodes, and brain is not an uncommon complication, especially metastasis to the brain.⁴ In the parenchymal type the clinical evidence tends to be less pronounced and to appear more slowly. Until the lesion erodes into or compresses a bronchus or involves the pleura, it does not give evidence of its presence. Loss of weight is the most constant sign in this type,

and pain is probably the most common sign. The pain is rather vague, and is difficult to localize and describe. Cough signifies the invasion of the pleura or, more often, the invasion of a bronchus. Dyspnea indicates an appreciable accumulation of fluid. Metastasis is frequently noted in the supraclavicular nodes. General examination is often negative or inconclusive. On the whole, nothing distinguishes carcinoma clinically from a myriad of pulmonary affections, and the only suggestive circumstances may be that the patient is of cancer age and the loss of weight is more pronounced than would be expected from the clinical history.

PARENCHYMAL TYPE OF CARCINOMA

My experience in these cases leads me to believe that carcinoma of the parenchyma of the lung starts as a more or less spherical nodule (Fig. 1), homogeneous but not very dense, lying isolated in apparently normal parenchyma, from which it is not sharply demarcated. Diverse opinions have been expressed as to the site preferred, but it may occur in any part of any lobe, except at the apex. As the nodule increases in size (Figs. 2 and 3), its borders may coincide in part or largely with the borders of the lobe; it may become a dense, irregular, infiltrating mass, or it may break into a bronchus and become indistinguishable from primary bronchial carcinoma.

Prior to the advent of complicating phenomena and as long as a single nodular or massive shadow in a lobe dominates the picture, primary carcinoma should at least enter into diagnostic consideration although many other conditions also should be canvassed. Among the latter, metastasis is one of the most significant, but the metastatic nodule is clear-cut, whereas the primary nodule usually has an ill-defined, infiltrating margin, at least in some part of its periphery. Metastatic nodules also are usually multiple at the time of discovery. Cysts, hydatids, benign tumors and gummas are rare, usually single, and have sharp noninfiltrating outlines. Simple abscess is an extremely confusing simulant, but it usually lacks the homogeneous density of the typical malignant nodule and its shadow is likely to exhibit central thinning or diffuse mottling. Tuberculosis of the nodular or lobar pneumonic type is characterized by a multiplicity of lesions and apical involvement. Although the clinician might reasonably



Fig. 4.—Adenocarcinoma (graded 4) of left main bronchus with some atelectasis.

Fig. 5.—Adenocarcinoma (graded 1) of right bronchus with almost complete obstruction.

Fig. 6.—Squamous-cell epithelioma (graded 3) of right lower lobe bronchus. Patient had received lipiodol injection before coming to the clinic.

confound tuberculosis and primary carcinoma, the roentgenologist should seldom have difficulty in distinguishing them.

In individual instances pneumonia, bronchiectasis or effusions may enter into the differential diagnosis, but they usually have the characteristics of inflammatory disease and the shadows are less homogeneous than that of lobar carcinoma. Atelectasis due to bronchial obstruction from various causes is shown as a veil-like shadow in which the texture of the lung can be distinguished.

BRONCHIAL TYPE OF CARCINOMA

The bronchial type of primary carcinoma in the early stages is characterized fundamentally by an adventitious shadow at the hilum of the lung. The tumor is unilateral, is centered accurately at the hilum, and has an infiltrating edge. The site of the lesion is fairly constant, namely, opposite the space between the sixth and eighth ribs, commonly at the seventh rib posteriorly (Figs. 4 and 5). Often, the shadow is roughly triangular, with the apex directed outward and with strand-like processes extending along the normal markings of the bronchial tree. Very early it may be perceptibly separated from the mediastinal margin; as the tumor grows this line of separation is lost. Besides the shadow of the tumor itself, bronchial obstruction is likely to occur early in the course of the disease and be evidenced by an area of atelectasis in the lobe supplied by the affected bronchus with its typical gauze-like shadow which does not completely conceal the markings of the lung. The secondary signs of bronchial stenosis and the resulting atelectasis are: elevation of the diaphragm on the affected side and displacement of the heart and mediastinal structures toward that side; there may also be slight collapse of the ribs. Occasionally the characteristic appearance of the atelectatic lobe may be obscured or complicated by the shadow of the lesion or accompanying obstructive bronchiectasis. In such cases the secondary signs of atelectasis are very helpful in sustaining a diagnosis of bronchial stenosis. If the bronchial growth is small or largely hidden in the mediastinum, the atelectatic signs may be the sole obvious evidences of disease. In certain cases, and especially if obstruction has existed for a considerable time, bronchiectasis occurs and is manifest typi-

cally in a fan-shaped, honey-combed shadow. Thus a mass shadow at the hilum, atelectasis and bronchiectasis, singly or in various combinations, constitute the basic manifestations of bronchial carcinoma.

It follows, therefore, that all other conditions which give rise to any of these three phenomena may require to be taken into account in the differential diagnosis. Fibrosis resulting from chronic bronchitis or pneumoconiosis is most pronounced in the region of the hilum, but it is bilateral and this circumstance excludes bronchial carcinoma. Enlarged lymph nodes incident to leukemia, lymphoblastoma, Hodgkin's disease, and infective or malignant abdominal disease, are occasionally largely or wholly unilateral, but the shadows have a smoothly rounded contour unlike that of a bronchial carcinoma. Rarely, lymphoblastoma is infiltrative, its shadow margins are indefinite, and distinction from bronchial carcinoma is difficult. Other lesions simulating shadows of the hilum include aneurysm, benign new growths, gumma, mediastinal abscess, Pott's disease, and tumors of the spine, but in most cases the shadow is relatively smooth. Nonopaque foreign bodies in the bronchus with abscess formation and atelectasis may produce shadows similar to those seen in primary carcinoma of the bronchus with bronchial stenosis. Finally, tuberculous nodes of the hilum cannot be ignored. The decisive test by which all simulants can be eliminated and the diagnosis of bronchial carcinoma confirmed is the bronchoscopic examination.

COMPLICATIONS MASKING PRIMARY CARCINOMA IN ROENTGENOGRAMS

Thus far I have reviewed briefly the roentgenologic signs of primary carcinoma, both parenchymal and bronchial, in the early and relatively uncomplicated stage. Even at this stage the multitude of simulants makes the diagnosis difficult. Later, extensive complications may so mask the underlying disease as to make it virtually impossible to identify it from the roentgenogram alone. Mottling, diffuse shading, streaky shadows and rarefaction resulting variously from congestion, atelectasis, bronchiectasis, abscess, or rarely from cavitation, together with the shadow of the original lesion, sometimes produce an indecipherable record. Two other common factors, metastasis

and fluid in the pleura, are even more concealing and confusing. Often the primary growth, whether bronchial or parenchymal, is accompanied by metastatic nodular or miliary lesions in one or both lungs. Although the fact of metastasis is obvious, the examiner is likely to assume that the primary focus is extrathoracic, because pulmonary carcinoma usually originates in other parts of the body. Accumulations of fluid in the pleural sac are not at all rare. If the amount of transudate is small or only moderate, the primary signs are not appreciably altered, but often the cavity is completely filled, and the entire lung is obscured by a dense shadow. In the latter condition, unless the patient is reexamined after paracentesis, the nature of the pulmonary disease cannot be determined.

In short, although the roentgenologist will often be the first to discover signs of pulmonary carcinoma or vaguely suspect its presence, he can seldom make a positive diagnosis without clinical aid. On the other hand, the clinician will usually require the stimulus of the roentgenologic report to orient his investigations, and he will certainly need the help of the roentgenologist and the bronchoscopist in making the final diagnosis. When the roentgenogram reveals the shadow of a mass, either in the hilum or in a lobe, which cannot confidently be attributed to one of the more common intrathoracic diseases, primary carcinoma of the lung is to be thought of, especially if the patient is of cancer age, if weight loss is extreme, and if the history is atypical. If the mass is in the hilum, bronchoscopy is indicated.⁵

In cases in which either atelectasis or bronchiectasis is the most striking feature in a roentgenogram of the chest, the corresponding hilum should be scanned for evidence of bronchial carcinoma (Fig. 6).

In cases in which fluid conceals all or most of the pulmonary field and an affirmative diagnosis of the underlying lesion cannot be made with confidence, roentgenologic examination should be repeated after paracentesis, for the lesion may be a carcinoma.

METASTASIS

Malignant disease of the lung often produces metastasis in the brain. I have seen two patients who came to the clinic primarily for treatment of an intracranial lesion. In both instances a casual roentgenologic examination of the chest, made as a routine, revealed the typical manifestations of primary malignant lesion. As a result of this experience I feel justified in urging examination of the chest as a routine in cases presenting symptoms localized in the brain, as they may be due to metastasis to the brain from carcinoma of the lung.

If pulmonary metastasis, either nodular or miliary, is obvious roentgenologically, and this report is fully warranted, it must not be assumed too hastily that the primary growth is extrathoracic, although it usually is. The examiner should consider the possibility of a primary focus in the lung, the roentgenogram should be inspected for a shadow of unusual form and size,

and the clinician should consider primary carcinoma of the lung among alternatives.

Thus far, with few exceptions, carcinoma of the lung, especially the bronchial variety, has been a hopeless condition. Harrington,² however, is of the opinion that if the lesion can be recognized early, lobectomy may be performed, thus affording a more optimistic prognosis. Certainly these patients have everything to gain and nothing to lose by such a procedure. Therefore, every effort possible should be made to recognize the carcinoma early. The most essential factor in the diagnosis is keeping the disease in mind.

The Mayo Clinic.

REFERENCES

1. Adler, Isaac: Primary Malignant Growths of the Lungs and Bronchi—A Pathologic and Clinical Study, New York. Longmans, Green & Company, 1912, 325 pages.
2. Harrington, S. W.: Personal communication.
3. Kirklin, B. R., Paterson, Ralston, and Vinson, P. P.: Primary Carcinoma of the Lung, Surg., Gynec., and Obst., 1929, xlviii, 191-199.
4. Parker, H. L.: Involvement of Central Nervous System Secondary to Primary Carcinoma of the Lung, Arch. Neurol. and Psychiat., 1927, xvii, 198-213.
5. Vinson, P. P., Moersch, H. J., and Kirklin, B. R.: Value of Bronchoscopy in Diagnosis of Malignant Conditions of the Lungs, Jour. Am. Med. Assn., 1928, xci, 1439-1443.

THE PHYSIOLOGIC AND PATHOLOGIC SIGNIFICANCE OF THE LIPOCHROMES*

By CHARLES L. CONNOR, M. D.
San Francisco

LIPOCHROMES are yellow to red pigments which occur mostly in plants, the most important of which are carotin, xanthophyll, and lycopin. The first of these is most abundant in carrots and green vegetables; the second, in yellow leaves; and the third is the red pigment of tomatoes. The name "lipochrome" has been given to them because of their almost constant association with lipoids in the animal body, and because they have in general the same characters as regards solubility and extraction. They are, however, in no sense lipoids. They are unsaturated hydrocarbons or oxyhydrocarbons, cannot be produced from lipoids, and do not combine with fatty acids. They are relatively inert chemically; are soluble in fats, unite with the halogens and oxygen, and can be extracted from tissues by petroleum, ether, chloroform, and other fat solvents. Upon oxidation they become colorless.

Their function, even in plants where they are most abundant, has not been determined. They are almost always associated with chlorophyll, but remain in leaves after the chlorophyll has disappeared. They are sometimes the only pigments in etiolated leaves, and here seem to take the place of chlorophyll. They probably, in plants, have a respiratory function, or have to do with photosynthesis in some way.¹

* From the Department of Pathology, University of California Medical School.

* Read before the Pathology and Bacteriology Section of the California Medical Association at the Fifty-Eighth Annual Session, May 6-9, 1929.

RÉSUMÉ OF EXPERIMENTAL WORK
ON LIPOCHROMES

It has been rather definitely shown by Palmer,² van den Bergh and Snapper,³ and others that lipochromes appear in the animal body only after the ingestion of food containing carotin or xanthophyll. It cannot be demonstrated that they have any function in animals, or that, indeed, they are of any particular importance. Chickens deprived of xanthophyll continue to grow in the same manner as when fed well-colored food (Palmer and Kempster).⁴ Drummond⁵ reported the failure of pure crystalline carotin, fed at the rate of 0.003 per cent of the ration, to replace vitamin A in the diet of rats. Steenbock, Boutwell, and Kent⁶ noted the close association of carotin and vitamin A in plants, but stated that vitamin A was not carotin. Later Steenbock⁷ advanced the provisional assumption that this vitamin is one of the carotinoid pigments, and in still later papers by Steenbock and his associates,⁸ they show that yellow pigments are almost inseparable from vitamin A of plants. Palmer⁹ discusses this work critically, and believes the evidence in favor of the identity of carotin and vitamin A is not sufficient. In fact Steenbock, Sell, and Buell¹⁰ could not obtain the same correlation between vitamin content and pigmentation when comparing animal products such as cod-liver oil, butter fat, perinephric fat, and egg yolk. Drummond and Coward¹¹ noted this lack of association of pigment content and vitamin A content in a large number of fats and oils. Colorless dog fat and colorless perinephric fat were rather rich in vitamin A. Palmer and Kennedy¹² found that albino rats grew and reproduced normally on diets in which 5 to 9 per cent of ewe milk fat (containing 0.00014 per cent carotin) furnished the vitamin A, and that growth was normal when carotinoid-free egg yolk from hens upon a carotinoid-free diet furnished the vitamin A. Coward and Drummond¹³ found that the synthesis of vitamin A in plants increases as the chlorophyll content increases. They also demonstrated little, if any, fat-soluble vitamin in yellow seedlings and red seaweeds, both of which contained abundant carotinoid pigment, but no chlorophyll.

Wichuizen¹⁴ and others noted the low lipochrome content of the blood serum in human beriberi, and stated that vegetables with a high lipochrome content also have a high antiberiberi value. McCarrison¹⁵ also noted that highly colored butter fat gave greater protection against edema of the adrenals of pigeons fed on autoclaved rice than poorly colored butter. The suggestion is then made that one of the fractions of vitamin B may be a lipochrome. This is further suggested by Underhill and Mendel,¹⁶ who cured a pellagra-like disease in dogs (a deficiency disease reported by Crittenden and Underhill¹⁷ in 1917) by adding colored egg yolk, highly colored butter, carrots or, finally, pure crystalline carotin to the diet. Goldberger,¹⁸ however, stated that carrots contain relatively little substance that will prevent black tongue in dogs, and will not prevent human pellagra.

REPORT OF AUTHOR'S EXPERIMENTAL WORK

My own experiments have been inconclusive. Twelve guinea-pigs upon a carotin-free diet lost weight rapidly and all died (except two which were killed) in a period of a month. The diet consisted of white turnips, white cabbage, white cornmeal, and oatmeal cakes prepared with Mendel's salt mixture (sodium chlorid, calcium lactate, magnesium citrate, ferric citrate), with filter paper. Pure carotin in olive oil did not supply the lacking food element. These experiments were not designed, however, to test out the vitamin content of carotin, and were poorly controlled. I determined the amount of carotin intake in a guinea-pig used by Wolbach and Howe¹⁹ as a control animal. This had been on a synthetic diet for two years, receiving all its carotin and xanthophyll in five cubic centimeters of orange juice daily. The daily intake of carotin was 0.002 milligrams; of xanthophyll, 0.07 milligrams. The animal was in perfect health.

From these results it may be concluded that vitamin A and carotin have almost the same solubility properties, and are very closely associated in plants, but that one may be present in some substances without the other. Carotin takes the place of the deficient substance in a diet which causes Crittenden and Underhill's disease in dogs, and this disease appears to be associated with black tongue in dogs and pellagra in man. In view of the contradictory results of Underhill and Goldberger, however, no conclusion can be arrived at concerning the relationship of carotin to vitamin PP,* nor, in fact, to any vitamin.

The effect of feeding lipochrome to animals differs with the animal in question. Practically all, of course, ingest it regularly with food. But the rabbit, guinea-pig, and many other animals do not store it in their adipose tissue. It is present in the fat of man, horse, cow, chicken, and others. Even when fed in concentrated form to rabbits and guinea-pigs, or injected intravenously or intraperitoneally into these animals, the fat does not become colored.²⁰ It is present in the blood of those animals which have colored fat, and is not found in detectable amounts in the blood of animals with colorless fat (van den Bergh, Palmer, Connor).

The cycle of xanthophyll in chickens has been observed by Palmer and his associates. It is taken in in yellow corn and green plants, appears in the fat and skin, and later in egg yolk. The density of color of egg yolk depends directly on the diet and indirectly on the number of eggs laid. When a diet low in lipochrome is fed, or when a large number of eggs are being laid, the skin and fat become pale, and the egg yolks colorless. In the chicken, then, one way of excretion is through the ovary, and in this and other animals it is excreted by the skin (Palmer), the sebaceous glands, and, in man, according to Hess and Myers,²¹ the urine. I could not confirm this last in guinea-pigs and rabbits, nor in one adult to whom pure carotin in olive oil was fed.

Lipochrome was present in the adrenal glands

* Pellagra preventive.

in all animals studied by van den Bergh, Muller and Brockmeyer,²² and by Connor.²³ It has been found in the blood, fat, skin, liver, spleen, adrenals, and corpus luteum of man, in the liver and adrenals only of rabbits and guinea-pigs; and in the skin, fat, and egg yolk of chickens. It was not present in any organ of a three months' old infant.

The maximal effect of carotin feeding is produced in diabetics upon a diet of green vegetables. The condition called "xanthosis diabetica" has been known since 1913 to be associated with an increase of lipochrome in the blood. Numerous cases of carotinemia have been reported in Germany in diabetics,²⁴ in children under asylum conditions, or in adults upon semi-starvation diets during the war. A few have been reported in this country since 1919 in children (by Hess and Myers)²¹ and in diabetics (by Head and Johnson,²⁵ and by Stoner).²⁶ A yellow coloration of the skin had been noticed by Baelz²⁷ in 1896, in Japanese upon diets of yellow vegetables. He called the condition "aurantiasis cutis." In nearly all these cases the condition has cleared up upon reduction of the amount of green vegetables ingested. But it is to be noted that certain diabetics frequently show a yellowish coloration of the skin even when, by the use of insulin, they are taking essentially normal diets, and such a patient is usually in the class of the severe diabetic, and has a high blood cholesterol. Also, carotinemia has never been reported in individuals who have been upon otherwise normal diets. Rabinowitch²⁸ believes that persistent carotinemia has about the same significance in diabetes as a persistently high blood cholesterol, that is, a doubtful prognosis. It was noted by Rabinowitch, and by myself, separately, that the average amount of carotin in normal blood is about 0.06 mg. per cent, and that in diabetic blood it is usually over 0.1 mg. per cent.

METABOLIC CYCLE IN MAN

In man the metabolic cycle seems to be as follows: Lipochrome is ingested with the food, is absorbed only partly, probably along with cholesterol by way of the portal system as well as by lymphatics, appears in the blood stream in higher concentration during the period of fat absorption, then falls in amount as the amount of fat decreases, *i. e.*, in about four hours. Some of it is carried to and deposited with lipoids in structures where fat is being stored or used in the formation of new tissues. These latter consist normally of the adrenal cortex, where lipoids appear necessary for cell metabolism, the corpus luteum, the sebaceous glands, and the skin. Pathologic lesions in which lipochromes appear are those structures to which lipoids contribute or form an essential factor, namely, xanthomas, atheromatous patches in the aorta, pathologic accumulation of fat in the spleen, liver, heart, or other organs, and lipomas.

That lipochromes may be broken down by the liver is indicated by the following experiment: Four rabbits were fed pure carotin in olive oil. Four hours later blood from the right heart and

from the peripheral circulation contained no carotin, but blood from the portal vein contained from a trace to 0.01 mg. per cent. The liver from these animals always contained carotin, but none was found in the bile. It is possible that what little carotin is absorbed from the intestine of these animals is broken down by the liver. Simple oxidation would render it colorless, and so its further progress could not be followed. Most of it, changed and unchanged, is excreted by the intestinal tract. The feces of all animals examined (man, rabbit, guinea-pig, rat) contained abundant lipochrome. There is only one positive experiment to the effect that carotin is excreted in the urine (that by Hess and Myers). All others have been negative or inconclusive.

SUMMARY

1. Lipochromes seem to be inert substances which are taken into the body in the food, and because of their solubility in fat, are stored where fat accumulates. They are not present at birth in infants, nor in other animals.

2. Carotin is closely associated with vitamin A in plants, but the two are separable. It exerts some influence upon conditions associated with vitamin B deficiency, but definite evidence that it will cure beriberi or pellagra is lacking.

3. In those animals which absorb lipochrome it is stored where lipoids appear normally or abnormally. The most notable places under normal conditions are: adipose tissue, adrenals, corpora lutea, and sebaceous glands; of abnormal conditions, xanthomas, lipomas, atheromas, and fatty infiltrations of liver, spleen and heart, are the most important.

4. Certain animals do not store up lipochrome, probably for two reasons: first, because very little is absorbed from the gastro-intestinal tract, and, second, because what little is absorbed passes into the portal system, and is broken down by the liver.

5. Normal human blood commonly but not constantly contains carotin in measurable amount. It is slightly increased in the blood of diabetics, and in these it may be associated with lipemia. Normally it is increased in the blood within two hours after the ingestion of carotin. It is excreted by the intestinal tract, and the skin and sebaceous glands. It does not appear in the urine.

6. There is no evidence that lipochrome is synthesized in the animal body or that it enters into any metabolic process.

University of California Medical School.

REFERENCES

1. Palmer, L. S.: Carotinoids and Related Pigments, New York, 1922.
2. Palmer, L. S.: J. Biol. Chem., 1916, xxvii, 27.
3. Van den Bergh, H., and Snapper, J.: Deutsch. Arch. Klin. Med., 1913, cx, 540.
4. Palmer, L. S., and Kempster, H. L.: J. Biol. Chem., 1919, xxxix, 299, 313, 331.
5. Drummond, J. C.: Biochem. J., 1919, xiii, 81.
6. Steenbock, H., Boutwell, P. W., and Kent, H. E.: Proc. Amer. Soc. Biol. Chem., 1919, April.
7. Steenbock, H.: Science, 1919, 1, 352.

8. Steenbock, H., and Gross, E. G.: J. Biol. Chem., 1919, xl, 501.
9. Palmer, L. S.: Ref. 1, p. 270.
10. Steenbock, H., Sell, M. T., and Buell, M. V.: J. Biol. Chem., 1921, xlvii, 89; Steenbock and Sell, J. Biol. Chem., 1922, li, 63.
11. Drummond, J. C., and Coward, K. H.: Biochem. J., 1920, xiv, 668.
12. Palmer, L. S., and Kennedy, C.: J. Biol. Chem., 1921, xlv, 559.
13. Coward, K. H., and Drummond, J. C.: Biochem. J., 1921, xv, 530.
14. Wiehuizen, F. E., Alting, C., de Langen, C. D., and Schut, H.: Med. Genneesk Lab. Weltevreden, 1919, iii, 44, Ref. from Palmer, Ref. 1.
15. McCarrison, R.: Brit. Med. J., 1920, No. 3111, 236.
16. Underhill, F. P., and Mendel, L. B.: Amer. J. Physiol., 1928, lxxxiii, 589.
17. Crittenden, R. H., and Underhill, F. P.: Amer. J. Physiol., 1917, xlv, 13.
18. Goldberger, J., Wheeler, G. A., and Lillie, R. D.: Pub. Health Rep., 1926, xli, 300.
19. Wolbach, S. B., and Howe, P. R.: Arch. Path., 1926, i, 1.
20. Connor, C. L.: Amer. J. Path., 1928, iv, 227.
21. Hess, A. F., and Myers, V. C.: J. A. M. A., 1919, lxxiii, 1743.
22. Van den Bergh, H., Muller, P., and Brockmeyer, J.: Biochem. Ztschr., 1920, cviii, 279.
23. Connor, C. L.: J. Biol. Chem., 1928, lxxvii, 619.
24. Kaupe, et al.: Münch. Med. Woch., 1919, lxvi, 330 et seq.
25. Head, G. D., and Johnson, R. A.: Arch. Int. Med., 1921, xxviii, 268.
26. Stoner, W. C.: Amer. J. Med. Sci., 1928, clxxv, 32.
27. Baelz: Quoted from Hashimoto, H., J. A. M. A., 1922, lxxviii, 4.
28. Rabinowitch, I. M.: Canad. Med. Assn. J., 1928, xviii, 527.

MONOCULAR OCCLUSION IN APPARENTLY ORTHOPHORIC EMMETROPES*

By RODERIC O'CONNOR, M. D.

Oakland

MY first paper on this subject appeared in the *British Journal of Ophthalmology* of 1924. It gave the results in a series of cases, and was intended to confirm and reinforce Marlow's work.

My second paper was before the 1926 meeting of the American Academy of Ophthalmology and Otolaryngology. In that paper were listed 110 patients who were apparently orthophoric but whose symptoms persisted after accurate correction of refractive errors.

In this paper I wish to list a series of emmetropes who were apparently orthophoric. All had persistent discomfort, related to the use of the eyes, severe enough to persuade them to carry out the prolonged monocular occlusion test in hopes of finding the cause of their symptoms.

In looking over my records I found at least as many similar cases who failed to carry out the test and many times the number listed who were practically emmetropic and whose muscle bal-

ance was within the degree of variation from orthophoria that is usually considered of no importance.

I am including only those who came under the strict limitations of the title in order to shorten the table and to make more emphatic the importance of the test.

In this connection I wish to state that I prove my operative results by occlusion, figuring that my work is not finished till the patient tests within the allowable variation from normal behind the patch.

This shows two things:

1. There is no need to fear the production of an opposite condition, provided, of course, that the right operation has been done at the right place.

2. The test behind the patch is the true one, exactly as the refraction under cycloplegia is the true test in that respect. In each instance the muscles involved have been put at rest.

In order to forestall the usual suggestion of a discussor I want to admit here that, if a series of *apparently normal and comfortable* eyes were patched, many would show muscle deviations, exactly as the cycloplegic discloses the true refractive error. The answer is that we are only interested in those patients who are in trouble. Because one patient may have no symptoms from a three-degree hyperphoria is no sign that another may not. In any event the occlusion test proves matters one way or the other.

The other point usually brought up in discussion is the question of accurate refraction. Ignoring the implication, I wish to state that many patients are perfectly comfortable with the hook-front prisms worn over an old correction that is known to be far from correct, and many others are comfortable with a prism correction alone when there are worthwhile amounts of ametropia present. All of which proves that moderate degrees of refractive error frequently fail to produce symptoms, just as errors of muscle balance so fail. Sometimes I see patients wearing spheres of a quarter diopter prescribed by oculists. I consider such a prescription to be an admission of ignorance of the cause of the symptoms.

Several years ago Doctor Burleson of San Antonio wrote an article praising highly an operation, devised by another Texan, for the relief of trachomatous lid troubles. He stated that, in all probability, American ophthalmologists would ignore the operation because it had not been invented by someone in central Europe with an unpronounceable name. I feel much the same in regard to the occlusion test. Had its discoverer been able to sign his name Ivan Awfulitch instead of Marlow the chances are that American ophthalmologists would have taken it up at once.

In my opinion only the unscientific and gullible type of mind can resist the proof, contained in the appended table, of Marlow's contention that

* Chairman's address, Eye, Ear, Nose and Throat Section, California Medical Association, at the Fifty-Eighth Annual Session, May 6-9, 1929.

only by prolonged monocular occlusion can an accurate diagnosis of the extraocular muscle balance be made.

1904 Franklin Street.

TABLE OF CASES

Heterophoria			Remarks
Exo.	Eso.	Hyper.	
4483		1	Headaches present as long as can remember stopped from date of patching. Prisms gave desired relief.
4821	4	2	Prisms gave relief.
5195		3	"No trouble now in using eyes."
5319	4	3	"Entire relief from headaches." Prisms.
5440	1	3	"Cannot get along without prisms."
6155	3	3	"Sews constantly and no trouble." Prisms.
7221	5	6	Optional shortening of sup. rect. gave entire relief.
7398	7	3	Patch relieved symptoms of 15 years' standing; prisms also, but she preferred operation, which also gave relief. No return of symptoms three years later. She had an appendectomy in hopes of relief from severe headaches.
7428	3	2	"No troubles." Prisms.
7495	6	2	"Can read and sew without headaches." Prisms.
7804	8	3	"No more headaches." Prisms.
4401	3	1	This patient could converge only to 16 inches, but refused operation for that insufficiency.
238F	6	5	"Better with prism correction."
716F	11	5	Optional shortening of sup. rect. gave entire relief except for reading. Prisms 3 in. gave relief for near.
8838	7	5	Optional shortening of sup. rect. gave entire relief.
8658	9	6	Shortening of sup. rect. and partial tenotomies of both externi gave complete relief from headaches.
8654	3	2	Prisms gave relief.
7797	8	2	Partial relief by prisms. Operation refused.
7804	8	3	Headaches and near disability relieved by prisms.
7843	3	1	Prisms gave entire relief even from scintillating scotoma.
9560	3	3	Prisms gave relief.
9292	3	3	Prisms gave relief.
3306	9	3	Prisms gave relief. No more nausea after near use. Auto trips now possible for the first time in comfort.
9728	6	3	Vert. prisms gave very definite relief.

By optional operation is meant one done at patient's request with the idea of doing away with the need for any glasses. None were done unless prism correction had given relief from symptoms.

TREATMENT OF FRACTURES*

THE USE OF UNNA'S ZINC OXID GELATIN MIXTURE

By LEO ELOESSER, M.D.

AND

W. L. ROGERS, M.D.

San Francisco

DISCUSSION by Maynard C. Harding, M.D., San Diego; Ralph Soto-Hall, M.D., San Francisco; H. W. Chappel, M.D., Los Angeles.

THE adhesive mixtures generally used in applying traction for the treatment of fractures have various disadvantages. Ordinary adhesive plaster, consisting of a rubber base with zinc oxid, irritates the skin and makes a water-tight dressing. Acne pustules and blisters make it necessary to change such a dressing after five, six, or seven days. The older yellow adhesive (Maw's English adhesive plaster on moleskin) is better, but not

quite so soft and pliable. A crease in the plaster makes a break in the underlying skin. It shares with rubber adhesive a tendency to slip with weights exceeding ten to twelve pounds, and when plaster slips, it invariably pulls the skin with it and makes further traction impossible. It does not keep well; old plaster is hard and brittle and does not adhere. Pure white Venice turpentine (which is not turpentine, but a solution of resins) and absolute alcohol, equal parts, painted on the skin makes an excellent adhesive mixture which gave great satisfaction abroad. It held well, so well that the cloth held by it to the skin would tear before the turpentine mixture gave; it was cheap, easily applied, and did not irritate. But it has not been possible to get the pure white Venice turpentine here; the yellow proved so irritating and made so many blisters that we had to abandon it.

Sinclair's glue and the acetone-celloidin mixture both get very hard and are likely to make pressure sores. Of the substances listed, English adhesive on moleskin for longitudinal strips, with the ordinary zinc oxid adhesive on muslin for transverse strips, seemed the most satisfactory.

UNNA'S ZINC-GELATIN

For several years we have given up adhesive plaster for traction and have substituted Unna's zinc-gelatin and stockinette.

For use in fractures an adhesive substance should meet two requirements: it should not irritate the skin and it should stick—stick for several weeks without having to be changed and without leaving a bed of pimples and pressure sores behind. Unna's zinc-gelatin does this.

The formulas vary. A very satisfactory formula is: Zinc oxid and gelatin aa 75.0 (one part of each by weight); water and glycerin aa 150.0 (two parts of each by weight).

The gelatin should be allowed to soak in the cold water several hours before heating; the mixture is then warmed over a water bath until the gelatin is melted, the zinc oxid is stirred in, and finally the glycerin added. The quantity given above is sufficient for one dressing; it is well, however, to make up several pounds at one time. Addition of 5 to 10 cubic centimeters of 5 per cent carbolic acid will prevent mold if the mixture is to be kept. It should be dispensed in a tin container, not in a glass or porcelain jar which will crack when the mixture is heated later. It should have a rubbery consistency after it cools and be smooth and free from lumps of undissolved gelatin. Any druggist can put it up.

OTHER ESSENTIALS FOR TRACTION

The other essentials for traction are: several yards of narrow stockinette, two or two and one-half inches wide; several yards of Canton flannel bandage two and one-half or three inches wide; a wooden board which is a little longer than the distance between the two bony prominences over which pressure may come (usually the two malleoli) and with a hole bored through its middle; some cord; carpet tacks; a hammer; and the necessary weights, pulleys, and splints.

*Read before the Industrial Medicine and Surgery Section of the California Medical Association at the Fifty-Eighth Annual Session, May 6-9, 1929.

PROCEDURE IN APPLICATION

These having been procured, the tin with the quantity of zinc-gelatin given above is set in a pan of water and heated. The limb is usually shaved, although this is not imperative, and a single layer of stockinette is pulled over it, smoothly, as one would a stocking. The melted zinc-gelatin is then worked into the stockinette with the hand. The hand works the warm mixture well into the meshes of the cloth, for it is adhesion between this lower layer of stockinette and the skin that counts; adhesion of the upper layers matters little. The gelatin should be applied as hot as the hand will bear. It is thin and workable when hot; as it cools it gets sticky and does not penetrate the meshes of the stockinette. The hand safeguards the patient against being scalded with too hot a mixture. A foot or so of the stockinette is left projecting below the sole of the foot and the rest is doubled back over the first layer. It is unnecessary to work further zinc-gelatin into the top layer of stockinette. It will stick by itself. A handful of absorbent cotton is dabbed onto the dressing to prevent its sticking to the bedclothes and the whole is powdered with talcum. The stockinette is slit over the back of the foot and the heel as far as the ankle, and the two lateral flaps thus formed are tacked to the spreader board. If the stockinette is narrow enough it will fit perfectly smooth without a crease or a fold; if it creases or folds, it is too wide and will not adhere.

An additional layer of zinc-gelatin and an additional wrapping with strips of Canton flannel placed transversely around the leg will add further support if much weight is to be used. The strips should be applied like shingles on a roof, beginning at the ankle, each turn being cut instead of reversed, as in applying an ordinary roller bandage.

COMMENT

This Unna's gelatin dressing has been very useful. It may remain in place indefinitely—six to eight to ten weeks. It is left this length of time in old people with fractured femoral necks; the skin remains beautifully smooth and white under it.

If stockinette is not to be had, two longitudinal strips of firm unsized muslin may be used; these are covered with transverse strips of Canton flannel as described above.

If much weight is to be used a firmer material, muslin, or drill may be sewn as a reinforcement to the stockinette from the ankle down and around the spreader board.

It is scarcely necessary to recall the usefulness of this dressing in leg ulcers, varicose veins, and the chronic edema of limbs recently removed from splints and plaster of Paris dressings. This bandage is habitually put on patients with fractured legs before letting them out of bed, or immediately after removing plaster of Paris splints. But one layer of stockinette should be used and this always crossed with a transverse layer of Canton flannel or wide-meshed crinoline if the bandage is to prevent edema. Stockinette alone will not do; the strain is transverse and not longitudinal, as

with fracture appliances. The dressing is applied in the morning, before the leg is swollen; to apply it after the leg is edematous is useless. One dressing will last for six to eight weeks. It is cleaner, cheaper, and more comfortable than a rubber stocking, but it must not be wet. The patient must keep his leg out of the water when he bathes. Hot water will immediately melt the dressing; the easiest way to remove it is to put the patient into a warm tub.

490 Post Street.

DISCUSSION

MAYNARD C. HARDING, M.D. (700 Electric Building, San Diego).—The dressing here described is one of the best. I do not believe, however, that it is really superior to Shiver's moleskin plaster. Orthopedic surgeons are used to leaving this plaster on as long as five months at a time, and have found it does not irritate. The newer rubber moleskin plasters are no better than ordinary adhesive, in my experience.

✽

RALPH SOTO-HALL, M.D. (350 Post Street, San Francisco).—I have had a limited experience with this method of traction, but have found that great importance should be given to the snugness with which the stockinette is applied. This stockinette should be very narrow or proper adhesion to the skin will not take place. Certainly adherence to every detail of the technique is necessary for success.

✽

H. W. CHAPPEL, M.D. (1136 West Sixth Street, Los Angeles).—Unna's gelatin dressing for traction, especially in fracture cases, has distinct advantages over other kinds of traction. The even pull on all of the skin under the dressing, the length of time the dressing can be used without changing, the excellent condition of the skin when the dressing is removed, and the ability to apply traction immediately, warrant a thorough trial of Doctor Eloesser and Doctor Rogers' method.

✽

DOCTOR ELOESSER (closing).—Since writing the above paper we note that Böhler of Vienna uses a zinc-gelatin traction dressing in fracture of the femur as an adjunct to skeletal traction by means of a Steinmann nail driven through the tibial tuberosity. (Technik der Knochenbruchbehandlung, Vienna, 1929.)

GOITER OPERATIONS IN MENTAL DISEASES*

By GEORGE H. SANDERSON, M.D.

AND

MARGARET SMYTH, M.D.

Stockton

DISCUSSION by Thomas G. Inman, M.D., San Francisco; Clarence G. Toland, M.D., Los Angeles.

THE idea that there might be a connection between disturbances of the thyroid gland and mental disease is not a new one. Parry,¹ in his classical description of exophthalmic goiter in 1786, mentions that it may be associated with mental phenomena. Graves² in 1835 noted the frequency of severe hysteria in this condition. Alex Robertson³ in 1874 held the view that Graves' disease was due to an inflammation of the cervical sympathetic, and that the accompanying exophthalmos and insanity were due to hyperemia in the affected organs from this cause, just as was goiter in the thyroid. In 1877 Leonard

* Read before the General Surgery Section of the California Medical Association at the Fifty-Eighth Annual Session, May 6-9, 1929.

Cane⁴ discusses the connection of exophthalmic goiter with mania. Savage⁵ in 1882 reported several cases of insanities with goiter, rejected the sympathetic theory, and maintained an open mind on the question of etiological relationship.

Since these early writings, articles too numerous to mention have appeared dealing with the various ramifications of this complicated subject. In one of the most exhaustive treatises on the relation of endocrine disturbances to mental disease Paul Sainton,⁶ in a series of articles published in 1906, described mental conditions arising from alterations in many of the glands of internal secretion. He separated the symptoms due to thyroid intoxication into two groups, one of maniacal agitation, and the other a depressive type.

REVIEW OF LITERATURE

The first article on goiter operations in mental diseases was that of Berkeley and Follis,⁷ who performed hemithyroidectomy in ten cases of catatonia. They claimed several cures and concluded that catatonia might be due to a hyperthyroidism or to a perverted secretion. Kanavel⁸ in 1909, after operating on twelve patients with catatonia and observing improvement in only one, concluded that there was absolutely no justification for thyroid surgery in this condition. Winslow⁹ in 1910 reported five cases in which operation was done with rather discouraging results. However, he believes that there may be some connection between the thyroid and the mental disease in question. Weinberg¹⁰ in 1922 reported a case of dementia praecox and one of manic depressive insanity, each with exophthalmic goiter, and both of them cured after thyroidectomy. Eastman and Eastman¹¹ performed hemithyroidectomy in four cases of dementia praecox in which one lobe of the thyroid was enlarged, and noted entire relief of the affliction in each case. Boys¹² in 1926 reported eight thyroidectomies for cases of goiter with well-marked mental symptoms, with six complete recoveries. De Courcy¹³ this year reports fourteen operations on insane patients with Graves' disease with twelve complete mental recoveries.

During the past four years Dr. Margaret Smyth, assistant superintendent at the Stockton State Hospital, and the writer have operated on fifteen goiters at the State Hospital and at the Clark Sanatorium in Stockton. We are indebted to Dr. Fred P. Clark, superintendent of the sanatorium, for permission to do this work, and for advice and counsel in its performance, which we wish to acknowledge at this point. This paper is based on the entire number of operations performed on such cases in this community, and on the results obtained, as all the cases have been followed up. These cases represent no especial group, either from the mental or somatic standpoint, but simply at random a series of operations on the most outstanding cases of thyroid disease that have occurred at hospitals for the insane in this community. In this respect this series, I believe, differs from any that I have been able to find reported in the literature.

EFFECT OF THYROID SECRETION ON NERVOUS SYSTEM

That the secretion of the thyroid gland has a profound effect on the nervous system and on the mentality of the individual, is so evident as to scarcely merit discussion. One has but to observe the profoundly toxic case of Graves' disease, or the well-developed case of myxedema to be convinced of this. On the experimental side Crile¹⁴ has shown that the thyroid gland, through its control of iodine metabolism in the body, controls the electric conductivity of the brain. Extirpation experiments and thyroid feeding experiments supply much information. Without the thyroid the brain is dull and stupid, and in infancy does not develop. With excessive thyroid secretion the nervous system is tuned to a high pitch of reactivity, its balance is exceedingly delicate and overresponsive to stimuli. The mental response which one would expect from abnormalities in thyroid secretion would be that which most commonly results from any intoxication and, depending on stimulative or depressive factors, varies from delirium, through more or less agitated, confused states, to stuporous conditions. Just what connection the major psychoses may have to this type of disturbance is a matter of question. Werelius and Rydin,¹⁵ in a statistical study based on examination of 4184 insane patients in Chicago, found only 6.45 per cent affected with goiter, which cannot be much above the incidence in that region among the sane. The percentage of goiters in dementia praecox, involutional melancholia, and simple depressions was somewhat greater than this average. Strangely enough they found in catatonia, about which so much has been written concerning its supposed resemblance to exophthalmic goiter, and its improvement after thyroidectomy, thyroid enlargement was rare—93 per cent of the goiters in dementia praecox occurring in the hebephrenic form.

The mental disturbances of the somatic type, which we know from common clinical experience to be due to thyroid diseases, are met with very seldom in insane hospitals. They are commonly recognized as intoxications and not frank psychoses, and are dealt with in our general hospitals.

RELATIONSHIP BETWEEN GOITER AND MAJOR PSYCHOSIS

We might postulate the several possibilities which occur to us regarding the relationship that goiter may play to a major psychosis, as follows: (1) that it may be incidental, and have no effect on the psychosis; (2) that it produces a hyperthyroidism with an agitating and unbalancing effect on the mind; (3) that it produces a hypothyroidism, with a dulling effect on the higher centers which through lessened control become alienated; (4) that it produces a perverted secretion, or dysthyroidism, with a specific effect on the higher centers; (5) that a large goiter through pressure on venous return produces a congestion of the brain with a psychosis dependent on abnormal circulation; (6) that it supplies a point of irritation of any type which brings out or

exaggerates the inherent characteristics of an unstable individual, causing the development of a frank psychosis.

In studying the records of these fifteen cases (the histories of which, unfortunately, time will not permit me to read) we have been impressed by a number of interesting points, which the following statistical summaries will bring out.

TYPES OF GOITERS ENCOUNTERED

Regarding the types of goiter occurring, our series has consisted of fourteen adenomas, ten showing a multiple colloid type, and four a fetal pattern, and but one hyperplasia with exophthalmos and this in a case of extremely bad epilepsy, in whom psychosis, if present at all, was a minor feature. As perhaps the most profound thyroid toxemias occur in exophthalmic goiter, we were surprised to find practically none of this type of goiter occurring among the insane. A series of goiters at random among the sane would show a higher percentage of exophthalmic type than we have found among the insane. This agrees with the survey of Werelius and Rydin, who out of 4184 insane patients found 270 goiters, only two of which were of the exophthalmic type, one being an epileptic psychosis and the other an undifferentiated depression.

Our series consisted almost entirely of adenomatous goiters. All were females; their ages varied from 26 to 64, the average being 41. In 53 1/3 per cent the goiter could be traced to well-known endemic localities. In 40 per cent of the adenomas there was a history of goiter in other members of the family. The duration of the goiter before development of mental symptoms varied from three to thirty years in the adenomas, and averaged fifteen and one-half years. This is not far from the average duration of an adenoma before toxic symptoms develop. However, we cannot say that many of the patients showed definite hyperthyroidism clinically. Out of fourteen adenomas only five, or 35 1/2, per cent showed clinically signs of hyperthyroidism, most of these being only slightly toxic. At least two were definitely hypothyroid. In many cases the endocrine status was very difficult to judge on account of the mental condition. We found it utterly useless to attempt to measure basal metabolism, except in a few, on account of lack of coöperation. In the maniacal type neither the pulse nor blood pressure could be relied on to give any clue to toxicity estimation. Definite obstructive circulatory signs could be found in only 33 1/3 per cent. One-third of our cases also revealed definite family history of insanity, probably a figure not high enough to represent the truth.

DIAGNOSIS IN CASES OPERATED AND RESULTS OBTAINED

The diagnoses in this series of cases were fairly representative of the usual percentage of the non-organic major psychoses in hospitals for the insane. We operated on five cases of dementia praecox, four of whom were unimproved by operation. In these the duration of the psychosis had been from four to seven years, and they were all bad cases. In the fifth the patient could be

said to be improved, as she was violent before operation, and afterward became a good, quiet trusty worker. However, she still has hallucinations and, therefore, cannot be said to be cured. The duration of her psychosis before operation was only two years, the shortest duration in the praecox cases we operated on. These cases were all hebephrenic or paranoid types. We have seen no catatonics in these institutions with well-marked thyroid disease. We also did five operations on patients having the diagnosis of manic depressive insanity. Three of these were of the depressed type and two were of the manic type. All three of the depressed type recovered mentally shortly after their goiter operations. Two were followed four years, and the other over two years after operation, and all were continuing perfectly well. Of the two manics one recovered mentally shortly after operation, and the other continued in a maniacal state unaffected by the operation, and died sixteen months later of maniacal exhaustion. One case, diagnosed involutional melancholia, who had been insane for one year before operation, was discharged as well four months after operation. One case, diagnosed psychosis with somatic disease, with a delusional insanity, recovered and was discharged four months after operation. One case of arteriosclerotic insanity in a woman aged sixty-four, with a large goiter, died two weeks after operation of cerebral arteriosclerosis. One very interesting case was an imbecile, age forty, who had a large goiter and had been an inmate of a home for feeble-minded for twenty years. For several years prior to operation she had been doing housework very well. She then became hysterical and developed delusions that someone was pulling her right ear and harassing her by driving swarms of bees around her. She was diagnosed as insane and sent to the State Hospital. Examination revealed a goiter extending from just below the lobe of her right ear on the right side, to an intrathoracic nodule on the left, which gave rise to a very loud buzzing bruit. After operation her delusions, which were really illusions, disappeared, her hysteria with them, and she is again a good worker. Our only case of exophthalmic goiter was an epileptic with an extremely toxic condition. Three operations were done on account of her condition, first a ligation, and then thyroidectomy in two stages. Her epilepsy was not improved, and she died seven months after operation in a convulsion.

CONCLUSIONS

It is quite apparent that there is no very simple etiological relationship between the ordinary form of thyroid intoxication (hyperthyroidism) and the major psychoses. Much has been written about exophthalmic goiter operations in the insane. It is our opinion that hyperthyroidism is rarely found in the true psychoses. An extreme hyperthyroidism resembles mania very closely and a delusional state may simulate dementia praecox, which is no more a psychosis than a typhoid fever delirium. We are inclined to think that many of these cases reported in the literature may have

been toxic deliriums rather than true psychoses. As to dysthyroidism or perverted secretion being a factor in these cases, no very good evidence has ever been brought forth to show that there is such a secretion possible, so we have disregarded this theory. Many large goiters produce a hypothyroidism, and this is much more apt to be a factor in this type of mental disease than a hypersecretion. Certainly hypothyroidism is a potentially toxic condition. However, we are inclined to believe that in most of these cases the goiter supplied a point of irritation which played a more or less important part in bringing out the inherent characteristics of a mentally unstable individual, and producing a true psychosis. Certainly anything that is apt to improve the general health of the body is going to increase the likelihood of recovery from a psychosis. The earlier this is done, before permanent physical changes take place in the corticocerebral cells, the greater the benefit we would expect to reap. Thus we obtained no results in our cases of dementia praecox which were severe and of long standing, but 80 per cent of all other cases than dementia praecox recovered from their psychoses. Despite the fact that most of these patients were very violent, we encountered no insurmountable difficulties in handling them postoperatively and, in fact, had no surgical mortality whatever. We are inclined to believe that the coexistence of goiter with major psychosis not only does not constitute any contraindication to operation, but that, on the contrary, the operation should be done, as it may break a link in the chain of etiology of the psychosis. Operation offers a prospect of cure; in fact, except in long-standing cases, a very good prospect.

809 Medico-Dental Building.

REFERENCES

1. Parry, Caleb Hillier: *Collected Works*, London, 1825, I, 478.
2. Graves, Robert James: *Lond. Med. Surg. Jour.*, vii, 516.
3. Robertson, Alex: *On Graves' Disease with Insanity*, *Jour. Mental Science*, May 21, 1874.
4. Cane, Leonard: *Connection of Exophthalmic Goiter with Mania*, *Lancet*, ii, 1, 1877.
5. Savage, George H.: *Exophthalmic Goiter with Mental Disorder*, *Guy's Hospital Reports*, 1882.
6. Sainton, Paul: *Les Troubles Psychiques Dans les Alterations des Glandes à Secretation Interne*, *L'Encephale*, i, 1906.
7. Berkeley and Follis: *An Investigation into the Merits of Thyroidectomy and Thyrolecithin in the Treatment of Catatonia*, *Amcr. Med. Psychol. Assn.*, xv, 283.
8. Kanavel, A. B.: *The Advisability of Thyroidectomy in Catatonic Dementia Praecox*, *Illinois M. J.*, xvi, 253.
9. Winslow, R.: *Partial Thyroidectomy in Dementia Praecox*, *J. A. M. A.*, Iv, 1195, 1910.
10. Weinberg, Max H.: *The Mental Side of Hyperthyroidism*, *Penn. Med. Jour.*, June 1922.
11. Eastman and Eastman: *Thyroid Surgery and Dementia Praecox*, *Ann. Surg.*, lxxvi, 438, 1922.
12. Boys, C. E.: *Psychosis Associated with Goiter*, *J. Michigan Med. Soc.*, xxv, 653, 1926.
13. De Courcy, Joseph L.: *Thyroidectomy in the Mentally Disturbed*, *Am. Jour. Surg.*, January 1929.
14. Crile, G. W.: *The Thyroid Gland*, W. B. Saunders & Co., 1923.
15. Werelius, Axel; Rydin, C. G.: *Goiter Among the Insane*, *J. W. M. A.*, August 5, 1911.

DISCUSSION

THOMAS G. INMAN, M. D. (879 Market Street, San Francisco).—It is an old observation that the nervous system is especially disturbed in affections of the thyroid gland. Graves spoke of the similarity of goiter symptoms to hysteria, and the French regarded them as the result of a neurosis.

While nervous symptoms are fairly constant in thyroid disease mental disturbances of a grave character are more rarely found. Abnormal irritability, rapid flow of thought, excitability without apparent cause, are common in increased activity of the thyroid. In severe cases there may be delirium, confusion, and coma. Hallucinations may occur. When the mental symptoms are of sufficient moment to suggest the presence of a psychosis the clinical picture, if dependent solely upon the abnormal thyroid function, will be recognized as a toxic psychosis, which, in reality, it is. These toxic mental symptoms should disappear with improvement in the thyroid disease regardless of whether medicine or surgery is responsible for the change. Attack upon the main problem, the thyroid disease, should be prompt and decisive. The mental symptoms will take care of themselves.

Occasionally thyroid disease develops in individuals already the subjects of a true psychosis but in whom the thyroid disease bears no causative relationship to the psychosis. Here a careful history, family and personal, with close examination of the psychosis itself may serve to clarify the situation and act as a deterrent to operative treatment. In patients belonging to this group the psychosis is rarely improved by surgical interference.

Into a third group will fall those unstable individuals whose mental balance is easily disturbed by exciting or depressing influences arising either within themselves or in their environment. The sudden lighting up of an old goiter may be sufficient to incite disturbances in the mental sphere and lead to the necessity of deciding upon the question of special treatment for the thyroid condition.

Unfortunately, in these patients, objective signs of thyroid disturbance are not marked and are estimated with difficulty. It is upon the clinical judgment of the medical attendant that dependence must be placed for the proper estimation of the influence of the thyroid on the mental upset.

There must necessarily be some errors in selecting proper cases for operation, should operation be the method of treatment indicated, but if preliminary studies, such as the nature of the case will permit have been carried out, occasional failures in obtaining a regression of the mental symptoms will be excusable.

The foregoing generalizations on the subject of psychoses in thyroid disease are supported by the experience of Sanderson and Smyth. Their deductions seem legitimate and go only as far as our present knowledge of the subject permits. In a small group of cases it is impossible to come to any hard-and-fast conclusions. Particularly is this true of the manic-depressive group where a recession of the psychotic symptoms may occur spontaneously. However, a selection of material, based on the results obtained in this study, would probably show a larger proportion of recoveries than are here reported.

In considering the relationship of somatic disease of any kind to an existing psychosis one must keep in mind something of the idea expressed by Esquirol more than one hundred years ago. "Every kind of organic lesion observed in the bodies of the insane has been also found in the bodies of those who never evinced a symptom of insanity."

CLARENCE G. TOLAND, M. D. (1930 Wilshire Boulevard, Los Angeles).—The influence of thyrotoxin upon the psychic state of an individual is a subject of considerable interest and importance, particularly to the psychiatrist and to the surgeon.

Doctor Sanderson's and Doctor Smyth's interesting paper is a valuable contribution to the problem.

It is difficult to prove that toxins of thyroid origin can produce definite mental disturbances, such as the major psychoses, but we must admit this possibility when we consider the important rôle other toxins play in the etiology of the insanities.

It is true that exophthalmic goiter rarely occurs in the insane, but not infrequently cases of exophthalmic goiter are found *among* the insane. These have been wrongly diagnosed and are merely manifesting phases of the depressive or stimulative effects of the toxic thyroid. The man who removes these unfortunate individuals from their environment and by proper treatment effects a cure certainly performs a very great service. Would it not be advisable for all institutions for the insane to employ someone especially qualified in diseases of the thyroid to examine their patients at intervals and attempt to segregate these cases?

The adenomatous goiters are of more frequent occurrence and, when toxic, they undoubtedly aggravate a preëxisting psychosis. A subtotal thyroidectomy is indicated in the majority of this type, but there is a certain percentage who are better left alone. In our experience many of the cases were considerably benefited by an operation, but very few of them received a complete cure. They were able to work, perhaps, but they always seemed to remain mentally unstable. In two cases of dementia praecox no benefit was obtained. One case of true hallucinations and delusions, prior to thyroidectomy, became violent and required restraint for about three weeks after the operation. She was eventually benefited, but is still quite depressed.

Any insane patient with a toxic goiter should be given the benefit of a subtotal thyroidectomy, for he has little to lose and much to gain; but the results as a whole are not very stimulating to the surgeon accustomed to the marvelous results following similar operations upon sane individuals.

Among certain of the laity there is a belief that occasionally insanity will occur after the removal of a goiter, and not infrequently we are asked this question by the anxious relatives of our patients. This unquestionably is merely a superstition founded, possibly, upon the infrequent case of postoperative myxedema, for we have never known a goiter patient without insanity to form a true psychosis as a result of a subtotal thyroidectomy.

✽

DOCTOR SANDERSON (Closing).—I wish to extend my thanks to the doctors who have discussed our paper, and especially to Doctors Inman and Toland, whose kindly and thorough discussions of the subject are a real contribution. We do not claim to have accomplished anything spectacular in our treatment of this series of patients, but so little of a definite nature is known of these psychoses, and there is so much reason for suspecting a subtle underlying endocrine basis for at least some of them, that we thought that anything that might shed any light on their relation to the thyroid gland, the keystone of the endocrine arch, would be well worth while. While we had this underlying purpose in mind in presenting this series, in most of the individual cases there was an additional definite indication for operation, such as size, cosmetic considerations, actual obstructive phenomena, or toxicity.

INVERSION OF THE UTERUS*

REPORT OF CASES

By EDWARD N. EWER, M.D.
Oakland

DISCUSSION by H. A. Stephenson, M.D., San Francisco;
John C. Irwin, M.D., Los Angeles.

TWO patients with puerperal inversion of the uterus came under observation in Highland Hospital during the year 1928. Both were treated by vaginal hysterectomy for reasons stated in the case reports which follow. According to the usual classification, one would be called chronic because the inversion was treated several weeks after its occurrence, and the other acute because the whole series of events took place within twenty-four hours. Both patients recovered.

REPORT OF CASES

CASE 1.—G. I., age 21, was admitted on the gynecologic service because of bleeding from an inverted uterus.

The bleeding had been continuous since the birth of her baby in another hospital four weeks previously. The pregnancy was normal and the delivery at term was spontaneous after a labor of eight hours.

She states there was difficulty in the removal of the placenta, it being accomplished in about fifteen minutes by vigorous fundal pressure with one hand, and manipulation in the vagina with the other. Excessive hemorrhage immediately followed. There was no pain then nor during the weeks following. She was given a blood transfusion twenty-four hours after delivery. She left the hospital in an ambulance after two weeks, and the inversion was discovered by her physician at an examination made later in her home. No attempt was made at that time to replace the uterus.

On entering Highland Hospital this patient's temperature was 99, pulse 130, and respiration 24. There was a slight systolic murmur heard at the apex. Blood examination showed: red blood cells, 1,430,000; hemoglobin, 30 per cent; white blood cells, 9150. There was a foul-smelling bloody vaginal discharge. Examination disclosed the completely inverted body of the uterus in the vagina with the cervix tightly contracted. The patient was in charge of Dr. Clarence Page, who attempted to reduce the inversion by taxis. This failing, he performed a Spinelli colpohysterotomy. It was found that the efforts to reduce by taxis had partially ruptured the softened anterior wall. After the incision of the cervix had been continued nearly to the fundus the uterus was easily replaced. However, in attempting to repair the incision the tissues were found to be so friable that it was impossible to place the stitches so that they would support the wound edges in coaptation. The uterus was therefore removed.

During the course of the operation 520 cubic centimeters of blood was given by direct transfusion. The temperature for six days following operation ranged between 99 and 102. The patient was discharged in good condition, other than the anemia, at the end of three weeks.

1 1 1

CASE 2.—L. B., para 2, white, American, age 23, admitted July 20, 1928 in first stage of labor at term. Her first labor had lasted twenty-four hours, ending with forceps delivery. The puerperium was normal.

The present pregnancy was uneventful. The labor lasted five hours, resulting in delivery of a normal infant in L. O. A. mechanism. The cord was around

* Read before the Obstetrics and Gynecology Section of the California Medical Association at the Fifty-Eighth Annual Session, May 6-9, 1929.

the child's neck three times, necessitating clamping and cutting. This may have exerted a pull on the fundus and caused dimpling at the placental attachment, thus beginning the inversion. Several authors mention this as a probability in such cases. There was much hemorrhage at this stage. It was noted that the fundus rose slightly in twenty minutes. The attendant states that he thought this meant placental separation, so he then used pressure, without undue force, to expel the placenta. This was followed immediately by complete inversion. The placenta was adherent at the fundus. It was stripped off and the uterus easily pushed back into place. Hemorrhage, estimated at 2000 cubic centimeters, followed, and to control it the uterus was packed with gauze. The delivery took place at 8 p. m. The patient was given 1000 cubic centimeters of physiologic salt solution by hypodermoclysis. The uterine packing was removed at 10 p. m. and her pulse was recorded as 120. She was then given 500 cubic centimeters of 10 per cent glucose intravenously. The pulse at 11:15 p. m. was 98 and of good quality.

The next evening I was called to see the patient because of the presentation at the vulva of a dark red fluctuant mass. This proved to be a portion of the membranes the margins of which were still attached to the reinverted fundus of the uterus, imprisoning a few ounces of blood. The uterus was found to be again completely inverted, filling the vagina and tightly gripped by the cervix. Moderate taxis under ethylene failed to replace it. As its color was not good, and as infection was suspected, I decided to remove it. An incision was made in the vaginal wall of the anterior fornix, the lower line of the bladder was located with a sound through the urethra and it was pushed up out of the way. The anterior uterine wall was incised, as in the Spinelli procedure, and at this point the uterus could easily have been replaced had its condition warranted replacement. The broad ligaments were tied and the uterus, including cervix, was removed under clamps placed upon the vaginal wall close to the cervix. The vaginal opening was partly closed with chromic gut, leaving a strip of gauze for drainage. The highest postoperative temperature was 101, and on the seventeenth day the red cell count was 1,340,000, and hemoglobin 27 per cent. She was discharged in three weeks.

These cases are met with so infrequently in individual practice that we have to rely largely upon the examination of masses of case report data to gauge the value of treatment procedures.

Full reports are desirable. They should give the age and parity of the patient, and an expression of opinion as to the cause of the inversion and when and how it was discovered. The amount of blood lost, together with other allied symptoms such as shock and pain, with the measures taken to combat them, should be stated. The method of delivery of the placenta and its area of attachment is of importance. Finally the method of caring for the inversion itself should be described with the character of convalescence or cause of death.

RÉSUMÉ OF SERIES OF FIVE HUNDRED AND SIXTY CASES REPORTED IN LITERATURE

I have examined a series of reports more or less fully detailed in the articles of Thorn, Mason and Rucker, Evans and others, with the following results:

Total number of cases, 560.

Number of deaths, 80—14 per cent.

Hysterectomies—vaginal and abdominal—67; died, 9—13.2 per cent.

Anterior colpohysterotomies, 14; died, 0.

Posterior colpohysterotomies, 48; died, 2—4 per cent.

Manual repositions, 324; died, 60—18.5 per cent.

Manual reposition, then, as a method of treatment gives the highest percentage of deaths in this series. Most of these were done immediately and doubtless in the presence of shock. Furthermore, in nearly 30 per cent of the cases in which it was tried the attempts at manual reposition failed. So, with this high percentage of deaths and failures, some inquiry as to when and under what conditions manual reposition should be attempted seems advisable. In the eighty deaths in this series the reporters express definite opinions as to cause in only fifty-eight of them. Of these, twenty-one died of hemorrhage, twenty of shock, twelve of sepsis, two of pulmonary embolism, and three of anemia and heart failure. Shock may be present without hemorrhage, but the two are usually related and considered together. Their great importance is indicated by the fact that nearly three-quarters of the deaths are caused thereby. In spite of this most writers stress the advice to make immediate attempts to replace the uterus without considering the condition of the patient. This is apparently the impulse of most obstetricians when suddenly confronted with this startling emergency. It is well known that any surgical procedure undertaken during shock is dangerous. In case of inversion the replacement should, I believe, be delayed in favor of measures to stop the hemorrhage and improve the condition of the patient. This opinion is also expressed in the papers of Maxwell, Hoover, and Peterson.

IMMEDIATE TREATMENT

The hemorrhage should be treated by pressure with gauze pads wet with three per cent acetic acid solution packed about the uterus. A rubber tubing tourniquet may be used for short periods, but if left in place too long the result will be disastrous. Catgut sutures may be placed deeply in the lower segment to constrict the uterine arteries.

For shock, blood transfusion is indicated in most cases, but the emergency is acute and something is needed to bridge the time taken in finding a donor and making other necessary preparations. The most promising agent to meet this requirement is, I believe, the gum glucose solution so successfully used in shock and hemorrhage emergencies by Ward and Farrar in the Woman's Hospital in New York. Glucose solution alone does not seem to be sufficient. In general hospital practice there are so many emergencies in which time is lost in arranging for transfusions that this solution, kept on hand in 300 cubic centimeter containers ready for use, may mean the occasional saving of a life. Of course, physiologic salt solution hypodermoclysis should not be forgotten. The various heart stimulants often administered in haphazard fashion are of little use, for what the heart needs is not more forceful contractions but something to contract upon, and

when its venous supply is increased and the well-known symptoms of shock have been relieved, attempts may be made to replace the uterus.

Relaxation, according to many reports, is best secured by spinal anesthesia. If difficulty is encountered, the anterior colpohysterotomy of Spinelli is the simplest, easiest, quickest, and safest method of replacement. In the cases here quoted it was attended with no mortality. However, where infection is known or suspected the wound in the uterus may furnish the same good incubation place for organisms as does the cesarean wound. Hence it would seem best when frankly infected to remove the organ. Most authorities so advise in the infected cesarean case.

In regard to the prevention of inversions the suggestion of Jones is worthy of notice. He points out that in inversion there must of necessity be relaxation of the uterine musculature. He thinks a good rule to follow would be that no Crede manipulation or traction on the cord be practiced during the third stage unless the uterus is firmly contracted. He thinks this rule would prevent one-half of the inversions. Firm contractions can be secured by giving half an ampoule of pituitary extract immediately after the birth of the baby. The other half may be given after the placenta has been delivered. This is routine practice in Highland Hospital, but was neglected in the one case of inversion which occurred there. This method of using pituitary extract has the added advantage of leaving the uterus free of clots and thus almost eliminating after-pains.

CONCLUSIONS

See that the uterus is firmly contracted and the placenta separated before using pressure on fundus to expel the placenta. When inversion has occurred treat the patient for hemorrhage and shock before making attempts to replace the uterus. If manual reposition fails, do the Spinelli anterior vaginal hysterotomy under spinal anesthesia. Vaginal hysterectomy may be necessary if infection is present.

251 Moss Avenue.

DISCUSSION

H. A. STEPHENSON, M.D. (490 Post Street, San Francisco).—Doctor Ewer has given us a very complete paper on inversion of the uterus. This condition is quite rare and many physicians have not encountered the condition in their practices.

Two examples of this condition have come under my observation within the past two years and these constitute my entire experience. In each case there was complete inversion almost immediately following birth of the baby. Pressure was being made on the fundus in each case to expel the placenta, but no traction was made upon the cord and in one case the placenta remained entirely attached to the fundus of the uterus. Shock was severe in each case, but hemorrhage was not an alarming factor. Reposition was done after delivery of the placenta and the uterus packed. In the first case the patient lived about five hours; apparently died of shock. In the second case the patient made an uneventful recovery.

Polak has called our attention to our behavior during the third stage of labor and has emphasized a most important principle to be followed, namely, never to be in a hurry to express the placenta until

we are certain that it has separated, except in the case where profuse hemorrhage is encountered. Bearing this in mind, we perhaps avoid two of the important causes of inversion: pressure on the fundus of the uterus or attempts to deliver the placenta manually. In those cases where the uterine wall is very thin and flabby, spontaneous inversion may occur.

The treatment of the condition has been well discussed by Doctor Ewer, and leaves no room for further suggestion.

✽

JOHN C. IRWIN, M.D. (1709 West Eighth Street, Los Angeles).—Doctor Ewer's cases and discussion of treatment of this rare but dangerous accident of labor have been very interesting. Since each individual sees so few cases of this complication in a lifetime, even though doing obstetrics as a specialty, one cannot form an authoritative opinion from one's own experience. Authoritative opinions, therefore, can only be formed from a collection of cases seen by many observers, and treated by various methods, as Doctor Ewer has done in this paper.

I have seen two cases of recent inversion of the uterus at labor, one as a house surgeon at the New York Lying-in Hospital, which was immediately replaced and the patient recovered. The second case I observed at the Royal Infirmary, Edinburgh, Scotland, in August 1928. This patient had been delivered on July 31 in her home by difficult forceps extraction for persistent occipitoposterior position and the placenta twenty minutes later, probably by Crede. She complained of severe abdominal pain immediately after delivery of the placenta and had considerable bleeding and shock. The vagina was packed with gauze and the patient transported from the Highlands into Edinburgh, taking six hours for such transportation. On arrival the packing was removed and the patient again complained of severe abdominal pain. A saline douche was given and the pack reinserted. Severe agonizing pain was said to be the first and most prominent symptom, and a profuse lochia the next most prominent. This patient was operated upon August 6, 1928, by Doctors Davidson and Douglas Miller. Doctor Davidson did median laparotomy incision and then dilated the cervical ring manually from above while Doctor Miller made pressure on the fundus uteri through the vagina from below. Considerable force was required to dilate the cervix, as was also necessary to reduce the inversion from below. Doctor Miller said he was on the point of pushing a finger through the uterine wall. After reduction the uterine cavity was irrigated with eusol solution at 120 Fahrenheit, but not packed. Pituitrin was given. This patient recovered. She was, therefore, allowed to recover from her shock and to go for one week before an attempt was made to reduce her inversion. This is in keeping with Doctor Ewer's views and I believe is the proper method of treatment, under the conditions one generally sees these cases, since we usually see them in consultation some time after the accident has occurred. However, if one is present and already scrubbed, gowned and gloved, when the inversion occurs, I believe it would be wise to attempt to replace the inversion at once before the cervix can contract, and I believe immediate replacement would not be difficult or very shocking to the patient. Certainly replacement and packing would prevent much hemorrhage, which is no doubt one of the greatest causes of the profound shock from which these patients suffer.

Prevention is of course the best treatment, and the important point in prevention is not to hurry the third stage of labor by Crede or by early expression or by traction on the cord. Doctor Ewer has done us a service in reporting his cases and discussing the treatment so wisely and understandingly.

INTERSTITIAL CYSTITIS*

REPORT OF CASES

By ANDERS PETERSON, M.D.

AND

BENJAMIN H. HAGER, M.D.

Los Angeles

DISCUSSION by William E. Stevens, M.D., San Francisco; Frank Hinman, M.D., San Francisco; Robert V. Day, M.D., Los Angeles.

THE occasion for presenting a discussion of a single disease is to recall to your minds an entity which is frequently masked by such a vague term as an "irritable female bladder." The occurrence of the disorder is by no means rare. The subjective manifestations are those of intense distress and the relief afforded by intelligent management is often short of miraculous. The importance, therefore, of accurate diagnosis is apparent. Since Hunner's original contributions there have been several reviews of the subject, notably those of Kretschmer, Keene, Hunt, and Bumpus. The nature of Hunner's practice suggested that the disease was limited to the female. The experiences of Geraghty and Bumpus, however, indicate that while the condition is predominant in the female it may occur in the male. An analysis of our office records reveals that of 1707 patients there were 1292 men and 415 women, approximately three males to one female. There were no cases of interstitial cystitis encountered in the males. Among the 415 women there were eight cases, an incidence of approximately two per cent. As the major work in urologic practice is with men, it is significant that not a single case occurred in this group. This discrepancy is in agreement with the experience of other urologists.

No satisfactory explanation has as yet been offered to account for the preponderance in the female. The work of Bumpus, later corroborated by Hinman, would ascribe the etiology to a specific bacterium of blood-borne origin, presumably from some focus of infection. Teeth, tonsils, and sinuses have been incriminated. It is curious that focal infection originating in organs common to both sexes should be more selective and manifest in one than in the other. Clinical experience does not always attest to an apparent relationship between a possible focus of infection and the bladder involvement. Insofar as known there is no apparent relationship between inflammatory diseases of the female adnexa, including granular urethritis and pregnancy, and the occurrence of the bladder lesions. It is a fact, however, that the disease is much more common during the child-bearing period. Some writers are of the opinion that the coincidental infection in the kidneys and ureteral stricture may be in part responsible for the condition. Yet as a matter of interest chronic bilateral pyelonephritis in the adult is much more common in the male than in the female. Social status appears to be of no consequence. Owing to the chronicity of the disease and the failure of diagnosis it is most frequently encountered in

women during the third and fourth decade, but an accurate study often reveals the onset of bladder symptoms at an earlier date. Of our eight cases six were married and two were unmarried, and the ages varied from thirty-three to sixty-two years.

SYMPTOMS

The subjective manifestations are characteristic. Constant discomfort in the region of the bladder, often with definite pain over the suprapubic area which is aggravated by jarring or overdistention of the bladder, together with marked daily as well as nocturnal frequency and dysuria, are pathognomonic of the disease. The marked frequency is occasioned by the inflammation which acts as a splint, thereby causing excruciating pain on slightest overdistention. The urine is essentially negative microscopically. That such a widespread destructive process can occur in the bladder wall without giving rise to objective urinary findings is probably responsible for the condition being so frequently overlooked.

DIAGNOSIS

The diagnosis is made by the presumptive evidence as suggested by the history together with the cystoscopic findings. Because of the reduced bladder capacity, often holding but two to three ounces, the characteristic appearance of the lesion cannot always be recognized. These patients are so intolerant to instrumentation that local anesthesia does not suffice and paravertebral or general anesthesia is required for a satisfactory examination. Hunner, in his original study, made his inspections through an endoscope, using air as a means of distention. This probably in part accounts for his observation. We have frequently noted that, with the direct cystoscope with water as a medium of distention, we have been able to recognize the lesion which we could not again identify with the lens cystoscope, except by overdistending the bladder to a point where a rent in mucosa covering the area of interstitial inflammation caused a rather profuse hemorrhage. A multitude of descriptive terms have been used to indicate the nature of the lesion. Many continue to refer to it as an ulcer, but it is not an ulcer in the true sense of the conception. The term is poor because it conveys something which it is not. The classical appearance of the lesion is that of an area of salmon red, usually single, though oftentimes the areas may be multiple and scattered. Occasionally there may be small areas of punctate hemorrhage on the mucosa. The appearance and distribution depends greatly on the chronicity. Some areas may be small, under a centimeter in diameter; others may be linear and extend like a ribbon across the dome or wall of the bladder. The lesion is as a rule circumscribed and the mucosa adjacent to the margin of the lesion may appear somewhat edematous. On overdistention of the bladder, the lesion bleeds profusely and in place of the circumscribed lesion there may be various striations extending beyond what was previously considered the border of the lesion. The areas are extremely sensitive. When the lesion is identified without recourse to general

* Read before the Urology Section of the California Medical Association at the Fifty-Eighth Annual Session, May 6-9, 1929.

anesthesia the patient complains of typical pain when the area is touched with the beak of the cystoscope. This procedure may likewise provoke profuse hemorrhage.

DIFFERENTIAL DIAGNOSIS

The differential diagnosis is as a rule not difficult. It may be confused with a simple ulceration or an ulceration of tuberculous origin, particularly so if the objective urinary findings are not marked. A simple ulcer per se is probably a very rare bladder occurrence and should never be so considered until tuberculosis or malignancy have been definitely excluded. Interstitial cystitis does not present the superficial excoriations or excavations of a true ulcer unless the salmon-red area has previously been treated by caustics or electrocoagulation. The surface of the lesions of interstitial cystitis does not become covered by adherent urinary salts or incrustations as observed in incrustated cystitis, Fenwick's ulcer and occasionally in the ulcerative, infiltrating carcinoma. True bladder ulcers are usually accompanied by microscopic hematuria or pyuria or both. Interstitial cystitis has a predilection for the unfixed portions of the bladder such as the dome and walls. Our studies reveal that in two cases the lesions were confined to the dome and in five to the right wall. In one case there was a history of multiple previous electrocoagulations as well as wide resection. A positive identification of a recurrence was not possible. Syphilis of the bladder, while rare and not distinctly typical, should be excluded by general examination and serologic studies. Chronic areal cystitis may simulate interstitial cystitis. This form of cystitis, however, is usually amenable to local treatment and does not cause the excruciating pain or hemorrhage on overdistention. Areas of atypical bladder inflammation associated with bullous edema may result from extravescical or pericystic inflammation, such as diverticulitis of the sigmoid, a diseased pelvic appendix or pyosalpinx. Such areas, however, do not present the cystoscopic appearance of interstitial cystitis and can usually be excluded by associated symptoms and special pelvic and colon examination. Bladder lesions occurring as sequelae of the application of radium to malignant conditions of the vagina and cervix should not be overlooked. They may closely resemble the symptoms of interstitial cystitis. Postirradiation bladder lesions may come on several years after radium treatment was instituted. When present they occur in the bladder base or trigone. The history of previous irradiation and location of the lesion should suffice to establish the diagnosis. In doubtful lesions a specimen should be removed for biopsy, not with a view to establishing a diagnosis of interstitial cystitis as there is nothing pathognomonic of the disease in the histological picture, but with a view to excluding malignancy.

Occasionally when considerable local treatment has been instituted the true nature of the disease may be masked by the secondary cystitis. When this is suspected a thorough study of the upper urinary tract should be made before attention is directed to the bladder treatment.

PATHOLOGY

The study of the pathology of interstitial cystitis is of interest chiefly because of what it fails to show. As previously stated there is nothing in the microscopic appearance of the lesion that is pathognomonic of the disease. The picture is that of an inflammatory process with typical chronic granulation tissue. Except where the mucosa has been broken by overdistention, the surface is more or less covered by low cuboidal epithelium. In some areas the blood vessels are numerous and prominent. There are both polymorphonuclear and round-cell infiltration. The latter is particularly predominant in the submucosal areas. The margin of the lesion bordering on normal mucosa is frequently jagged with marked perivascular infiltration and aggregates of round-cell infiltrations suggesting tubercles. Some areas show considerable fibrosis, probably dependent upon the chronicity of the inflammation. Other areas appear quite vascular and in certain sections there is present an unusual distribution of nerve tissue. The process may extend throughout the extent of the bladder wall.

TREATMENT

The treatment of this vague disorder is purely symptomatic. However, as the literature contains numerous reports of an apparent relationship of the condition with foci of infection, we have empirically advised the eradication of any possible focus as a part of the general treatment. The local treatment may be either radical or conservative. Segmental resection was practiced for a number of years, but the unsatisfactory results soon placed surgery in disrepute. These lesions have a great tendency to recur regardless of the nature of treatment instituted.

When recurrence follows segmental resection, the symptoms are more aggravated as a result of diminished bladder capacity. For the present at least, conservative treatment is the method of choice, namely, transurethral electrocoagulation, overdistention of the bladder, or a combination of the two. Hager and Bumpus have had considerable experience during the past two years with the two latter methods. With the patient under general anesthetic the bladder is distended with irrigating fluid to a capacity of 250 to 350 cubic centimeters. In many instances this simple procedure has been followed by a period of freedom from symptoms. The results have not, on the whole, been as permanent as those resulting from electrocoagulation. Electrocoagulation, plus overdistention, has given very satisfactory results and is the treatment of choice in the majority of cases. These patients practically all show an immediate relief from symptoms, many of them stating that for the first time since the onset they can sleep through the night and live in comfort during the day. Complete cures do not always follow. Relief from symptoms may be a false criterion of cure. Relapses are common and repeated electrocoagulations may be required. Extensive electrocoagulation may be contraindicated in those cases of long standing which have been subjected to numerous electrocoagulations. The



Fig. 1.—Almost complete loss of surface epithelium. Marked infiltration of small round cells and polymorphonuclear leukocytes. Numerous gland tubules. Swelling of lymph spaces with wide separation of muscle bundles.

bladder wall becomes thin and cicatricial, almost like tissue paper. Fatal peritonitis has developed under such circumstances. Beer recommends the use of the monopolar current instead of the bipolar current in questionable cases. A résumé of the clinical symptoms and results of treatment in our eight cases is appended.

Figures 1, 2, and 3 are from sections made through areas of interstitial cystitis from portion of bladders removed by segmental resection (courtesy of Dr. A. C. Broders). The chronic inflammatory process with typical granulation tissue formation is present in all three sections though varying somewhat in extent and degree.

REPORT OF CASES

CASE 1.—H. C., single, age sixty-two years. Was seen in consultation October 1, 1921, complaining of painful and frequent urination. Nocturia four to five times every night. Hematuria in small amounts had occurred a few times. There had been no renal colic, but she complained of pain over the lower lumbar spine. These symptoms had persisted for a period of over two years.

Several cystoscopic examinations had been done and many attempts to control the dysuria by medication and by local treatment of the bladder.

General physical examination was negative. Blood pressure was 140/80, temperature 98.2, urine showed a few red cells and an occasional leukocyte. Wassermann was negative.

Examination under general anesthetic revealed a small, narrow lesion in the right wall which bled easily. Indigo carmine appeared in three minutes from each side in strong concentration. Both ureters admitted catheters the normal distance and clear urine was recovered from each side.

Electrocoagulation of the ulcerated area was carried out. The improvement was immediate and marked.

The patient's physician communicated with us fourteen months later, stating that there had been no recurrence of the trouble.

1 1 1

CASE 2.—B. W. S., a widow, sixty-one years of age, was examined August 1, 1921. She had borne one normal child and had undergone a pelvic operation twenty-five years previously. Her complaint was pain in the bladder region, marked frequency and nocturia (eight times) of two years' duration. There was no renal colic, no hematuria. She also complained of chronic constipation and overweight (210 pounds). The general examination was essentially negative. Blood pressure was 170/90. Catheterized bladder specimen showed a few hyaline casts, a few leukocytes and red blood cells.

Cystoscopy revealed a small ulcerated area in the right bladder wall. Both ureters admitted the catheters the normal distance and normal urine drained from each side. The ulcerated area was electrocoagulated, but this was done incompletely on account of severe pain. Ten days later she was again subjected to more thorough electrocoagulation under anesthesia. The frequency cleared up rapidly following this fulguration. The patient was well one month following, but she has not been heard from since.

1 1 1

CASE 3.—L. E., a married woman, age thirty-eight, consulted us January 16, 1923, because of marked frequency and nocturia of eight or ten times a night. She had one child eleven years old. There had been a curettement done in 1920 and an ovarian operation in 1922 for relief of severe pain over the bladder area, which was accompanied by very marked frequency. A previous cystoscopic examination had revealed nothing abnormal in the kidneys or bladder.

The general examination was negative. Urinary examination showed a few pus cells. Wassermann negative. A cystoscopic examination showed a small bladder capacity. Catheterized urine was clear. A congested area, one centimeter wide, two and a half centimeters in length, was seen in the dome of the



Fig. 2.—Surface epithelium almost completely intact. Leukocytic infiltration predominant with extensive perivascular infiltration. Rather marked connective tissue formation.



Fig. 3.—Surface epithelium intact. Considerable thickening of submucosal area, with diffuse infiltration of small round cells and leukocytes. Wide separation of lymph spaces.

bladder. When this area was touched with the catheter the patient complained of intense pain. Electrocoagulation under gas and oxygen anesthesia was done a week later. The first voiding after the fulguration took place in six hours. She had the first night of undisturbed rest she had experienced in three years.

Three months later she again complained of pain and frequency, and a small ulcerated area was again electrocoagulated. Another electrocoagulation was done in three months' time. She reported marked improvement over the original symptoms, but not complete relief.

The patient moved to Baltimore and was seen there by Doctor Hunner. A letter from Doctor Hunner in February 1924 stated that the ulcer still persisted in the vertex and that he intended to apply 10 per cent nitrate of silver directly to this area.

CASE 4.—V. J. M., age forty, married, was examined July 10, 1925. She gave a history of painful and frequent urination of five years' duration.

During the first two years she had had several electrocoagulations and many bladder irrigations done elsewhere, with only temporary relief. Eleven months previous a wide resection of the ulcerated area had been done, with marked improvement for a period of eight months, after which frequency and bladder irritation returned. The pain was most severe just at beginning of menstruation. There was no kidney colic and no hematuria. She was unable to go to the theater or take automobile trips of any length, due to frequent desire to void.

Cystoscopic examination under an anesthetic showed a bladder of small capacity. The mucosa looked normal with the exception of vascular injection of the trigone. The operative scar was well healed. The urine was clear. The trigone, the lower part of the bladder neck and inner portion of the floor of the urethra were lightly fulgurated without improvement.

CASE 5.—R. W., married, age forty-six years, was seen in consultation April 8, 1927. She complained of pain and frequency of urination. During the last two years she had suffered from pain on slight distention of the bladder so that there was frequency every few minutes during the day and about every hour during the night. There was no renal pain, no hematuria; weight loss was ten pounds in two years. She had two children, both in good health. Perineorrhaphy one and a half years previously.

X-ray of the urinary tract was negative. The urine showed a moderate number of pus cells and a few red blood cells. Cystoscopic examination under anesthetic showed a moderate cystitis over the bladder base. Bleeding occurred on slight overdistention, and this could be seen coming from an elongated rent in the mucosa located on the right wall and extending to the dome of the bladder. Both ureters were catheterized and drained clear urine.

The ulcerated area was electrocoagulated. A few bladder irrigations followed this treatment. The improvement was very marked and the patient remained free from her trouble up to February 1929, when the former symptoms recurred in about the same severity. Examination February 11, 1929, again showed the ulcer area in the dome and right wall. Electrocoagulation was again followed by spectacular relief.

CASE 6.—G. W., single woman, fifty-seven years of age was seen September 30, 1927. She had suffered from bladder distress and frequency for seven years. Her father was a physician in New Jersey and she had been carefully examined cystoscopically and had been given many trials with local treatments. No pathology had ever been found to explain her trouble.

General physical examination was negative. She was extremely nervous, due to loss of sleep, and had lost considerably in weight. Voiding was so frequent that her social life had been entirely abandoned. She was disturbed four to five times at night and fifteen to eighteen times during the day. There had been no renal colic and no hematuria. Examination of the urine was negative.

Cystoscopic examination under gas anesthesia showed a bladder of small capacity. Bleeding occurred on moderate distention. In the dome were seen streaks of blood coming from an area about three centimeters in length, and one centimeter in width. This area was electrocoagulated. The improvement was so marked that she had the first good night's rest she had had in many years. She began to gain in weight and was able to resume her usual social life. A check-up examination seven months later showed clear urine with a bladder capacity of eight ounces.

In October 1928, one year following, she again complained of moderate frequency, and cystoscopic examination showed an area of ulceration in the dome which was electrocoagulated. One month after this application the bladder held twelve ounces without distress. Five months have now elapsed without return of the symptoms. On account of the rather spectacular relief of their great distress these patients are usually very grateful.

CASE 7.—V. M., married, age thirty-three years, was seen April 17, 1928. General history and examination of no consequence except for a gonorrheal infection fourteen years previously and a bilateral pyelonephritis for which renal lavage and bladder irrigation had been done with some improvement. She had suffered from bladder distress and frequency for years. At the present time she complained of frequency, two to three times at night and every two hours during the day. There was dull pain in both kidney regions. The blood pressure was 115/80. The urine contained a moderate number of pus cells and a few red cells.

Cystoscopic examination under anesthesia showed bleeding on moderate distention. Both ureters were

TABLE 1.—*Résumé of the Clinical Symptoms and Results of Treatment in Eight Cases*

	Age	Sex	Single, Married or Widowed	Duration of Symptoms	Character of Urine	Location of Lesion	Form of Treatment Instituted	No. of Treatments Necessary to Evolve Initial Symptomatic Cure	Duration of Relief
1	62	F	S	Two years	Few red cells Occasional leukocyte	Right wall	Transurethral electrocoagulation	One	Fourteen months
2	61	F	W	One year	Few red cells	Right wall	"	Two	Impossible to trace
3	38	F	M	One year	Few pus cells	Dome	"	One	Three months
4	40	F	M	Five years	.....	Trigone and floor of bladder neck	Had previous electrocoagulation and segmental resection	No relief following electrocoagulation	Not traced
5	46	F	M	Two years	Moderate pus cells; few red	Right wall	Transurethral electrocoagulation	One	Ten months
6	57	F	S	Seven years	Negative	Dome	"	One	Twelve months
7	33	F	M	Several years	Moderate number of pus and red cells	Right wall	"	One	No recurrence to date—eight months
8	42	F	M	Twenty years	Occasional red cell and leukocytes	Right wall	"	One	No recurrence to date—ten months

catheterized. There was no evidence of obstruction in either ureter and each specimen contained a moderate number of pus cells.

There were two small papillomatous growths in the center of the bladder toward the dome. To the right of these growths were seen two small, salmon-red areas from which drops of blood could be seen. Even under anesthesia the patient had marked muscular contractions when electrocoagulation was applied. The small papilloma responded easily to fulguration.

The bladder irritation improved immediately, but the urine showed numerous pus cells. During the following several months bilateral pelvic lavage and bladder irrigations were carried out, but the urine constantly showed from a few to many pus cells from each kidney.

Cystoscopic examination November 16, 1928, eight months after fulguration treatment, showed no recurrence of the papillomas or ulcers.

• • •

CASE 8.—R. O., married, age forty-two years, was seen May 30, 1928. She complained of marked frequency and severe pain just above the symphysis pubis. She had not been free from frequent and painful urination for over twenty years, and during this period of time five abdominal operations had been performed without improvement. She had not spent a single night without voiding, sometimes as often as ten to fifteen times.

Cystoscopic examination made under gas anesthesia showed a fairly large cyst in the internal sphincter. Both meatuses looked normal, the trigone was negative. The urine showed an occasional red cell and a few leukocytes.

High up on the right wall was an ulcerated area, about one centimeter in length and half a centimeter in width. The bladder bled easily upon distention with fluid. The ureters were not catheterized. The cyst as well as the ulcerated area was electrocoagulated.

The following morning the patient stated that she had experienced the first freedom from pain in over twenty years. There has been no recurrence of symptoms up to this writing, March 1929, ten months later. 1136 West Sixth Street.

DISCUSSION

WILLIAM E. STEVENS, M. D. (870 Market Street, San Francisco).—There are few, if any, diseases of the urinary tract which have been described under so many different names as the condition which Peterson and Hager choose to call interstitial cystitis. Elusive ulcer, Hunner's ulcer, submucous cystitis, pannural cystitis, pannural circumscribed ulcerative cystitis, cystitis infiltrans circumscripta and cystitis parenchymatosa are other designations used by various writers, but I believe, with Peterson and Hager, that interstitial cystitis is the preferable term. Raschkis of Vienna and other European urologists regard this condition as merely one type of chronic cystitis, but the great majority of American urologists agree with Peterson and Hager in classifying it as a separate entity. Skene, in his book on diseases of the bladder and urethra in women, published as long ago as 1887, used the term "interstitial cystitis."

This condition is almost always found in the fundus or walls of the bladder and, unlike other types of cystitis or ulcer, it is much more common in women. I treat about an equal number of pathologic conditions of the urinary tract in both sexes and have seen several cases of interstitial cystitis in women, but none in men. I use both the lens type of cystoscope with water distention of the bladder and the direct Kelly method of cystoscopy with air distention in the examination of female patients. The etiology of this condition is uncertain, but in view of its greater frequency in women the correctness of Hunner's theory that distant foci of infection, such as the teeth, tonsils, and sinuses, are the principal factors is questionable.

In my experience bilateral pyelonephritis has been more common in women than in men, but I do not understand how this disease could have any special connection with this particular type of lesion.

Occasionally no ulcer is present and at other times the ulcer is so small that it is hardly visible. Unlike more common forms of bladder-wall pathology a submucous fibrosis always predominates in interstitial cystitis, its thickness and extent depending on the degree of the inflammatory process. Other important factors to which Peterson and Hager call attention in their discussion of the symptomatology and diagnosis

of this condition and which are worthy of special emphasis are: frequency of urination, pain out of all proportion to the cystoscopic findings, and marked decrease in the bladder capacity. At times very few, if any, pus or blood cells are found in the urine. Urethritis, which is usually associated with this condition, is at times partly responsible for the symptoms and should receive appropriate treatment.

Tuberculosis and syphilis of the bladder, the latter rare, should always be ruled out.

An occasional case will apparently respond to almost any method of treatment. Others seem to be incurable.

Peterson and Hager are to be congratulated on the excellent results following their treatment by fulguration, all of their patients, with one exception, showing initial symptomatic cure.

Kretschmer has also obtained good results following this method of treatment, but believes that recurrences are not so common following resection.

Resection is preferred at the Brady Urological Institute although deep fulguration is first tried.

Favorable results have been reported from distention of the bladder and the instillation or direct application of silver nitrate solution.

Intra- and extra-urinary foci of infection should always be eradicated if possible.

Improvement followed dilatation of the bladder and the instillation of basic fuchsin solution in one of my cases. Another responded to dilatation and the direct application of 10 per cent silver nitrate solution.

✱

FRANK HINMAN, M.D. (384 Post Street, San Francisco).—I think that the condition under discussion should be called after Hunner, who first described it. If we all speak of a Hunner lesion, we will all know what is being talked about. The condition is quite a definite entity and occurs in the bladder with certain typical characteristics. An important one of these that has not been mentioned is its tendency to occur in a line or linear formation which may be interrupted, so far as its activity is concerned. Overdistention of the bladder will bring out these separate lines of pin-point hemorrhage. Usually the lesion arches across from above one ureteral orifice to the corresponding region above the opposite orifice. There may be slight areas of inflammation branching off from this main arch. I have seen four or five typical cases in men. Usually the bladder urine is negative microscopically and bacteriologically. Fulguration has given me the best results in the treatment of the condition.

✱

ROBERT V. DAY, M.D. (1930 Wilshire Boulevard, Los Angeles).—No one seems to have thought much of the etiology of the interstitial ulcer except that it is produced by a hematogenous infection originating in a distinct focus of infection. No consideration is brought forth as to what determines the localization of the infection in the bladder wall. Almost every patient I have seen with this lesion, gave a history of being in the hospital and of being catheterized for a number of days or weeks during such stay in the hospital. The technique of catheterization of women in the hospitals is reprehensible. In the first place the bed sags down, the position is bad, and the usual light is insufficient. Next, soap and water, and finally lysol are usually employed, leaving a puddle of fluid around the fourchette which undoubtedly contains much pathogenic bacteria. Finally, a male catheter is used and introduced too far so that it shunts off laterally on one side or the other and traumatizes the wall of the bladder in about the situation that represents the center of the Hunner lesion.

As to treatment, I think most of us have gotten away from a wide resection; except in desperate cases, as a last resort. Good results have followed fulguration; but one wonders if the good results were not entirely due to the overdistention incident to the fulgurating under an anesthetic. Personally I have had just as good results from overdistention as from fulguration. It is difficult to believe that the increased scar from the fulgurating can finally be of any benefit.

ANESTHESIA IN THE SMALLER COMMUNITIES*

By R. G. HENDERSON, M. D.

Long Beach

PROBABLY no influence has been greater in broadening the field of surgery than the discovery and introduction of ether as an anesthetic in 1846. Operative procedures were thereafter made possible which could not have been attempted before that era. The future of surgery depends just as markedly upon progress in methods and the discovery of new anesthetic substances. Upon the anesthetist of the future rests the responsibility of contributing his share to the progress of surgery.

Progress in the art of anesthesia has been rapid during the past twenty-five years. Perfection of apparatus and the introduction of additional anesthetic substances, available for general anesthesia, have given new impetus to the specialty. The trained anesthetist is now a necessary part of the surgical team and upon his skill often rests the success or failure of the operation.

The problem of making available satisfactory service in anesthesia for surgeons generally should receive thought and attention. In the larger cities, especially in large clinics, the problem has been solved. Full-time anesthetists are there employed who can devote all their energy to building up the service to a high degree of excellence. This is as it should be, and is ideal. I believe, however, that even under such conditions anesthetic service should extend beyond the realm of inhalation methods.

Spinal anesthesia, sacral and perisacral anesthesia should be administered by a competent anesthetist. The majority of surgeons are not interested primarily in the administration of anesthetics, but are forced to give spinal anesthetics because no anesthetist trained in their use is to be had. Skill in this type of anesthesia would broaden the field for one whose entire time is not taken up in giving other types of anesthesia.

In communities of medium size, where there is not enough anesthesia given to utilize all one anesthetist's time, other work could be employed. Gas therapy at present seems to be a closely allied side line which should interest anesthetists, and, oxygen therapy in pneumonias and other respiratory affections. Carbon dioxide is being used to deëtherize patients; also in the therapy of persistent hiccough. Where mornings only are used in the operating room, arrangement can be made to administer in the afternoon dental anesthetics, or anesthetics for short operative procedures for otolaryngologists. I have known some men to combine anesthesia with a medical specialty, as cardiology, quite successfully.

The problem of anesthesia service becomes increasingly difficult the smaller the community. In the past two years several inquiries have come to me regarding this situation. Many surgeons have

*Chairman's address, Anesthesiology Section, California Medical Association, at the Fifty-Eighth Annual Session, May 6-9, 1929.

been forced to employ lay anesthetists because no professional man interested in this specialty was present in the community. It seems to me that a greater effort should be taken to interest interns in anesthesia. Especially should they be instructed thoroughly in the use of gas anesthetics. Special short courses in anesthesia could be arranged in the larger clinics, where those who wished, could receive training. This would be far more instructive than a demonstration of apparatus by commercial houses whose interest terminates with the sale of a gas machine, the buyer using the apparatus on his own responsibility.

Two or three small communities, situated a few miles apart, might keep one trained anesthetist busy. Or, as suggested before, some other line could be pursued in conjunction with anesthesia. An endeavor should at least be made to increase the knowledge of anesthesia among medical men so that better anesthesia will be more generally available in the smaller localities.

Bank of Italy Building.

TOTI-MOSHER OPERATION IN OBSTRUCTION OF THE NASOLACHRYMAL DUCT*

REPORT OF CASES

By R. C. MARTIN, M.D.

AND

F. C. CORDES, M.D.

San Francisco

DISCUSSION by M. F. Weymann, M.D., Los Angeles; Roderic O'Connor, M.D., Oakland; H. J. Hara, M.D., Los Angeles; Barton J. Powell, M.D., Stockton.

UNTIL recent years dacryocystectomy has been the only relief we have been able to offer patients with a chronic suppurative dacryocystitis. In simple epiphora, without infection, due to obstruction of the nasolachrymal duct, a small percentage of patients are relieved by probing. In the majority of these cases no permanent relief is obtained; they are benefited for only a short time and then return with their former symptoms.

It has been said that dacryocystectomy gives satisfactory results. It is true that the chronic inflammation of the conjunctiva is relieved by this procedure, the eye is no longer bathed in pus, and under ordinary circumstances there is no epiphora. Most of these patients, however, are not altogether happy. When out of doors on a cold day, or when the wind is blowing, they complain of the annoyance of the eye watering. In some instances this is sufficient to warrant partial extirpation of the lachrymal gland.

We feel that an operation of the Toti-Mosher type, in properly selected cases, gives excellent results, and from the patient's point of view, far superior results to extirpation of the sac. There are, however, certain contraindications that must be kept in mind.

It is absolutely essential that there be no stricture between the punctum and the sac, as this

will, for obvious reasons, produce a failure. It has been surprising to see the relatively large number of these cases in which this type of stricture is present. It is desirable to avoid slitting the canaliculi.

In cases where cleaning up a lachrymal infection is a preparation for a cataract extraction, this type of operation is not indicated. Following the Toti-Mosher, there is no doubt but that the conjunctival sac is more exposed to possible infection from the nose. Consequently, it would seem poor judgment to perform, preliminary to a cataract extraction, an operation that would increase the hazard of infection.

From our small series of cases, we have found that a chronic suppurative dacryocystitis of long standing is no contraindication. In our first patient, a boy of ten, the chronic suppurative process had been present for four years. In several instances this condition had persisted for three or four years. In one patient there was a history of a bilateral chronic dacryocystitis of eight years' duration. The enlarged thickened sac does not complicate the operation, but rather facilitates the finding of the sac.

Judging from our one failure, extirpation of the remaining portion of the lachrymal sac is not complicated by a previously performed Toti-Mosher operation.

While these patients as a rule consult the ophthalmologist, we feel teamwork with a rhinologist has a decided advantage. A large portion of the work is primarily nasal, and in a certain percentage some preliminary intranasal procedure is necessary. Observation has shown that where these patients are operated upon by the ophthalmologist there is a much larger percentage of poor results. This is due primarily to a failure to carry out the details of the nasal portion of the operation. The ophthalmologist is, however, more competent to decide upon the advisability of the procedure and to carry out the postoperative treatment. His more intimate knowledge of the lachrymal apparatus is also a decided aid.

OPERATIVE TECHNIQUE

The technique of the operation is as follows:

At the time of the tear sac operation, or two weeks previously, any septal deviations and the anterior tip of the middle turbinate are removed; under local anesthesia, preferably. If this is not done adhesions will result from working in a narrow nose and will defeat the purpose of the operation. An incision is now made one centimeter from the inner canthus and parallel to the bridge of the nose. A curved incision or one closer to the inner canthus may result in a bow-string scar and must be avoided. The incision may be from one to three centimeters long, depending on the operator's preference. We prefer a large incision, as the scar is not bad.

The sac is lifted from its bed easily by working from above, downward and forward. Any other route of approach is apt to prove troublesome. The periosteum is always adherent at the inner canthal ligament.

* From the Departments of Otorhinolaryngology and Ophthalmology of the University of California Medical School.

* Read before the Eye, Ear, Nose, and Throat Section of the California Medical Association at the Fifty-Eighth Annual Session, May 6-9, 1929.

The anterior ethmoidal artery may be ligated if desired. We have not done this routinely, and in only one case was the bleeding troublesome. A Mosher ethmoid curette is now plunged through the soft lachrymal bone and the opening enlarged in all directions by means of Kerrison Rongeurs, Koffler ethmoid, and Grunewald ethmoid forceps. All blocking ethmoid cells and anterior superior overhang of the middle turbinate are carefully removed.

The medial half of the sac and the upper portion of the nasolachrymal duct are carefully removed with sharp scissors so that the lateral half of the sac remains as a disk with the punctum in its middle. Care should be taken to avoid any pouching at the margins. Closure of the wound is made with interrupted black silk sutures through the skin only, except for the suture in the exact middle of the incision which includes the deeper tissue. These may be removed in forty-eight hours.

Early postoperative lavage is important, as it keeps the canal clean and prevents possible adhesions or inflammation around the opening into the nose.

The following is a résumé of the first fourteen operations. These have been observed postoperatively for at least six months, so that we feel justified in reporting the results as final. With the exception of one case, all have been seen or communicated with during the last month. In two of the cases reported a bilateral operation was done, with an interval between operations.

RESULTS OF CASES

CASE 1.—Charles G., age 10. Had discharge and watering from left eye for past four years. Has had long series of probing by various men, but without results.

Left eye showed a chronic suppurative dacryocystitis. No stricture between punctum and sac.

On May 29, 1927, Toti-Mosher operation was performed with excellent results. Complete disappearance of symptoms.

CASE 2.—Mrs. G. T., age 62, complained of discharge and watering of left eye for a number of years. No previous treatment had been given. Left eye showed a marked chronic suppurative dacryocystitis. No stricture between punctum and sac. Toti-Mosher operation, December 31, 1927. Initial results good, no epiphora or discharge. Patient returned February 28, 1928, with return of symptoms.

It was impossible to lavage through into the nose, and pressure over the site of tear sac expressed pus. A probe inserted struck against a bony obstruction; if the nasal end of the probe was slightly tilted down it passed into the nose. The condition persisted in spite of treatment, and it was found necessary to extirpate the remaining portion of the lachrymal sac. This was followed by primary healing. The failure in this case can be attributed to the opening into the nose being at too low a level.

CASE 3.—Mrs. S. D., age 48, has had epiphora of the left eye for about one year, due to a stricture of the nasolachrymal duct. She was operated upon February 10, 1928, with complete relief of symptoms.

CASE 4.—Mary S., age 40, has had epiphora for three years, accompanied by discharge of pus from

sac upon pressure. Has had a long series of probings without result. Right eye showed a chronic suppurative dacryocystitis with obstruction of the nasolachrymal duct. Was operated upon February 10, 1928, with excellent results.

CASE 5.—Mrs. R. H., age 44. Eight years ago was in automobile accident and received fracture of bones of face and nose. Since then both eyes water and pressure in corners of nose expresses pus into both eyes. Had bilateral chronic suppurative dacryocystitis. On May 1928, markedly deviated septum operated upon. On June 30, 1928, left eye was operated upon, and on August 28, 1928, the right eye. Results excellent in both eyes, with disappearance of symptoms. Because of the previous multiple fractures about the nose, some difficulty was encountered during the operation.

CASE 6.—Mr. T. B., age 27. Was seen in clinic, May 1927, with obstruction of nasolachrymal duct of the right eye. This was probed for a period with relief of symptoms for six months. In June of 1928 the stricture of the nasolachrymal duct was again present and patient was operated upon. The immediate results were good, and up to the end of July, a period of about six weeks, the patient was free of symptoms. At this time patient left San Francisco and has not been seen since.

CASE 7.—Mr. E. M. Has had watering of left eye for a number of years. The tear duct has been probed but without success. On January 1928, Toti-Mosher operation was performed. Results were good.

CASE 8.—Mary K., age 45. Right eye tear duct closed for two and a half years; has had several long series of probings without relief. On October 23, 1928, Toti-Mosher operation was performed, with relief of symptoms.

CASE 9.—Susan D., age 50. Right eye watered and discharged for a number of years. Had right-sided chronic suppurative dacryocystitis. Was operated upon October 5, 1928, with disappearance of symptoms.

CASE 10.—Violet M., age 40. Had right-sided chronic suppurative dacryocystitis of four years' duration. There was a slight constriction of the canal just before the sac. This showed no tendency to increase over a period of six months; we therefore performed an operation October 8, 1928. Up to the present time patient has remained free from symptoms.

CASE 11.—Anna B., age 58. Has had epiphora of several years' duration in both eyes. Examination showed a bilateral chronic suppurative dacryocystitis with stricture of the nasolachrymal duct. On October 9, 1928, operation was performed on the left side, and on October 15, 1928, on the right side, with relief of symptoms on both sides.

CASE 12.—Mrs. Mary K., age 40. Right eye has watered several years; has had series of probings. At the last series the pain was so severe that patient left her physician before he had finished. Examination showed stricture of nasolachrymal duct. Patient was operated upon in October 1928. Results were good, with disappearance of symptoms.

SUMMARY

In the series here reported, the Toti-Mosher operation has been performed fourteen times. With one exception, these patients have all been kept under observation from six months to two

years, and have all been seen or communicated with during the last month. Of this series there has been only one failure, and this, as previously explained, was due to faulty technique.

Five of these patients had been probed over varying amounts of time without relief.

In presenting our results, we realize that it is rather a small series of cases from which to draw conclusions. The results, however, have been sufficiently good to warrant our belief that, in properly selected cases, the Toti-Mosher is the operation of choice.

384 Post Street.

DISCUSSION

M. F. WEYMANN, M.D. (903 Westlake Professional Building, Los Angeles).—Doctors Cordes and Martin are to be congratulated upon the high percentage of cures in their series. Their success is undoubtedly due to exact observance of the details of technique. I agree with them that extirpation of the sac is still the operation of choice before intra-ocular operation, and in individuals where the puncta or canaliculi have been damaged, or where the sac is excessively scarred. There can be no question but that we should prefer dacryocystorhinostomy in selected cases, and the cases suitable for this operation will be much greater in number if we discontinue such mutilating procedures as slitting the canaliculi and forcible probings before recommending dacryocystorhinostomy. X-ray photography of the sac after filling with bismuth emulsion, as described by Ewing, should be of assistance in the selection of cases. Having decided that operation is needed, the question arises which of the several procedures for dacryocystorhinostomy offers the best chance of success. The main types are the intranasal operation of which the West is an example, and the combined external and internal procedure of which the Toti-Mosher and the Dupuy Dutemps operations are examples.

Wojatschek reports twenty-two successes out of thirty-two West operations and four successes out of nine Toti operations. There is no difference in the cosmetic result. By success I mean cure of infection and epiphora. Harrison reports twelve successes out of fifteen West operations which were followed for some period of time. Gillum observed three cases treated by the West operation, which remained cured after nine years. Hessberg found only four patients out of thirty-five operated by the Toti procedure who showed lacrimation. Lange reports twenty-three cures out of twenty-nine operations with the Toti procedure. He believes it equal to the West and easier to do. Erik Knutson reports eighty per cent of cures out of sixty-one West operations. Dupuy Dutemps in 1924 reports 299 operations by his technique with 92.3 per cent cures. However, only twenty-seven cases were observed over one year. This operation is very similar to Mosher's modification of Toti's procedure. Doctor Mosher, in a recent communication, reports successful cure of pus infection and tearing in 85 per cent of cases operated at the Massachusetts Eye and Ear Infirmary by his technique. He stresses the removal of the anterior ethmoid cells and the correction of high deviation of the septum, if present.

From an analysis of the above figures we may conclude that any of the well-accepted procedures offers about 80 per cent chance of successful cure. Toti himself in 1927 describes the modifications and various procedures for dacryocystorhinostomy and states that it remains to be determined which procedure is best. It would seem that we need not fear to advise any of the above methods; the greatest success will follow the use of that technique in which an operator is most proficient.

⌘

RODERIC O'CONNOR, M.D. (1904 Franklin Street, Oakland).—This paper is complete, and no one who has had experience with the unmodified Toti can disagree with it in any respect.

Therefore, in describing my results and troubles with the unmodified Toti, the intention is to emphasize the following statements made in the paper:

1. The importance of teamwork with the rhinologist. In seven of my fourteen operations, repeated S. O. S.'s for intranasal help were necessary. Much of this trouble probably could have been avoided had the intranasal work been done as a preliminary. The prolonged after-care in these seven cases was so annoying that I have not performed the operation since before Mosher announced his modification.

2. Early postoperative lavage is most important. In this connection I might be able to add one idea in regard to the pressure dressing advised by Toti. In my early cases this was used with several temporarily occluded canaliculi resulting. So it was abandoned for a simple protective dressing, with early probing and lavage.

As it happens my total number of operations is the same as that listed in this paper (fourteen). Out of this number there was one failure to relieve the epiphora and in this one, fluid could be syringed freely into the nose. In none was extirpation of the sac required. While on this thought I might mention that I prefer to us Gifford's destruction of the sac lining by trichloroacetic acid. It gives uniformly successful results, can be done as an office procedure, the patient loses practically no time, and it costs him much less in other respects.

I feel sure that this paper is going to encourage me to again take up intranasal drainage of the lacrymal sac, and for that encouragement I wish to thank the authors.

⌘

H. J. HARA, M.D. (432 South Boyle Avenue, Los Angeles).—Some years ago Dr. H. P. Mosher reported in the *Annals of Otolaryngology, Rhinology, and Laryngology* the analysis of the follow-up work in those cases of chronic dacryocystitis in which the Toti-Mosher operation was performed at the Massachusetts Eye and Ear Infirmary. He reported 90 per cent cure for suppuration and 75 per cent relief for epiphora.

I have recently returned from Doctor Mosher's clinic. During my stay there, extending over a period of a year, I have had ample opportunity to observe a number of these cases of chronic dacryocystitis both before and after the operation, and am quite certain that in these later cases his results are still better.

The literature sheds little light on the pathogenesis. Primary dacryocystitis is said to be rare. In the series I have studied at the infirmary, about one-third of the cases were among Italian women. Experience has shown that these particular people are notoriously subject to disorders of the nose and paranasal accessory sinuses. Might not, then, the underlying factors that bring on the disturbance of the normal function in the nose and throat also play a part in the causation of the dacryocystitis? Viewed in this light, the problem is for the rhinologist as well as the ophthalmologist.

⌘

BARTON J. POWELL, M.D. (Medico-Dental Building, Stockton).—Doctors Martin and Cordes have accomplished a service in reporting these cases. They have given encouragement to those of us who are seeking a better method for the relief of these unfortunates. Acknowledging that the usual method of slitting, probing and syringing is not only painful, slow and too often unsatisfactory, the oculist has constantly sought something better.

Meller of Vienna, an instructor of many of us, taught us to extirpate the sac and curette the duct. After following this teaching for many years, it too was found more or less a failure.

In a limited number of cases my associate and brother, Dr. Dewey R. Powell, and I, have been using the Toti-Mosher operation and intend to follow up this procedure in the future in selected cases.

PULMONARY TUBERCULOSIS IN INFANTS AND YOUNG CHILDREN—ITS CLINICAL DIAGNOSIS*

By WILLIAM M. HAPP, M.D.
Los Angeles

DISCUSSION by Lloyd B. Dickey, M.D., San Francisco; F. M. Pottenger, M.D., Monrovia; E. W. Hayes, M.D., Monrovia.

PULMONARY tuberculosis in infants and young children presents a very different clinical picture from that seen in adults. The confusion regarding the diagnosis of this disease in young patients indicates a lack of familiarity with the pathology and with the interpretation of the various clinical signs.

Tuberculosis in the infant is an infection which occurs on virgin soil. One has the opportunity of witnessing the development of a disease in a subject not previously infected, in whom allergy to tuberculosis has not developed. This is a very different disease from tuberculosis as a later infection in a patient in whom allergy has developed.

Krause¹ has compared tuberculosis in the infant to experimental tuberculosis in the guinea pig, and tuberculosis in the adult to experimental tuberculosis in the rabbit (see Fig. 1). If a normal guinea pig is inoculated with virulent tubercle bacilli it is noted that the bacilli appear in the lung in a few minutes but that they do not stop in the lungs, but travel immediately to the tracheobronchial lymph glands and localize there, causing lymph glandular tuberculosis. In the normal rabbit similarly inoculated, bacilli are caught in the lung by the presence of a considerable amount

of lymph glandular tissue within the lung parenchyma, and, consequently, tuberculous infection develops in the lung with very little glandular reaction. Tuberculosis in the infant infected for the first time resembles that seen in the guinea pig, whereas tuberculosis in the older child or adult follows the picture seen in the rabbit.

With this in mind, the course of the disease in the infant may be more clearly followed. We may accept the idea now generally held that the initial infection occurs in the lung parenchyma. However, this primary focus is so small and the reaction is so insignificant that it cannot be made out by any method of physical diagnosis, although it can sometimes be recognized by the fluoroscope or by the x-ray. By the time the symptoms have developed, involvement of the tracheobronchial glands is present and may usually be detected by appropriate methods.

It should be emphasized that the diagnosis of tuberculous infection in a young subject can be made with reasonable certainty, but that this diagnosis should not be made on the basis of an x-ray film or any other single procedure, but by a careful study of the patient as a whole, including the history, contact, symptoms, careful physical examination, tuberculin test, study of the blood picture and the x-ray. By an analysis of all these findings, one can arrive at a diagnosis of the type of infection and the prognosis may be determined.

CONTACT

The infant and young child not previously infected present a fertile soil for infection with the tubercle bacillus. For this to take place, however, there must be a close and intimate exposure with an open case. It is possible for infection to occur from soil or an infected house, but in the vast majority of cases human contact is essential. For this discussion, milk-borne infection need not be seriously considered, as pulmonary tuberculosis is essentially an infection with the human type of organism.

A history of contact cannot always be readily determined. One reason for this is the peculiar attitude existing among the laity regarding this disease. It is looked upon as rather a disgrace to have tuberculosis in the family and the matter is usually suppressed. Close questioning will often reveal a chronic cough or "weak lungs" or "bronchitis" in some member of the household where a flat negative reply has been given to the question of tuberculosis.

Infection does not always come from a member of the immediate family. It may come from a relative who visited the household for a short period, or from a servant, nurse, or cook who served a short term with the family. Considerable detective work may be necessary to elicit the source of infection, but it can usually be accomplished.

SYMPTOMS

The symptoms of tuberculous infection which occur in the adult are chronic cough, expectoration, hemoptysis, night sweats, loss in weight, fever and fatigue. All of these, except fever and

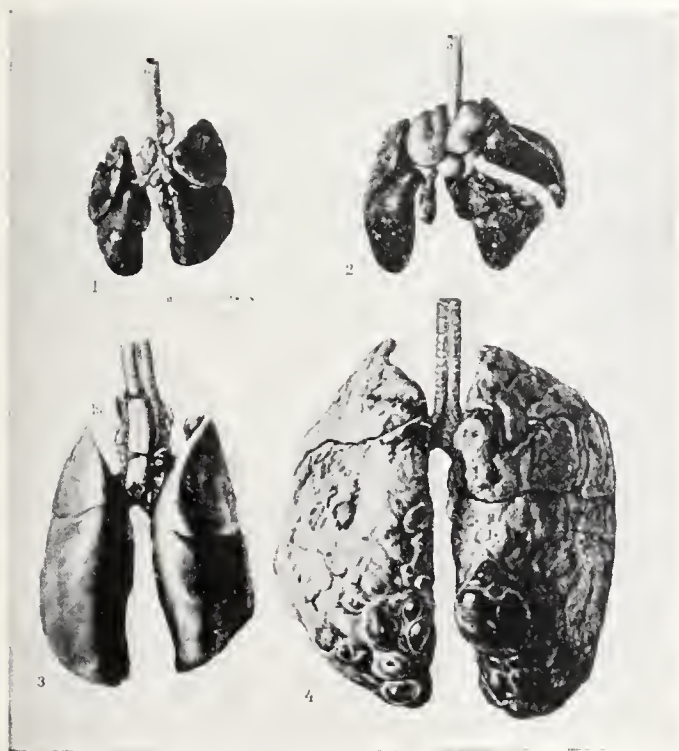


Fig. 1.—Normal and tuberculous lungs and tracheobronchial lymph nodes of guinea pig and rabbit compared. 1. Guinea pig, normal. 2. Guinea pig, tuberculous. 3. Rabbit, normal. 4. Rabbit, tuberculous. (From Krause.)

* Read before the Pediatrics Section of the California Medical Association at the Fifty-Eighth Annual Session, May 6-9, 1929.

fatigue, are absent in the young child. The characteristic symptoms in the infant and young child are the following: lack of appetite and indifference to food; fever, highest in the afternoon; gastro-intestinal disturbances, as attacks of diarrhea or occasional vomiting; nervous symptoms, as wakefulness, restlessness, and irritability; failure to gain rather than an actual loss in weight, although this may occur; fatigue; poor color; and, in some instances, cough. Any child who runs a low-grade elevation of temperature not satisfactorily explained, who tires easily, who is wakeful and restless and has loss of appetite, should be under suspicion for tuberculosis until proved otherwise, even in the absence of known contact and a negative physical examination. All such cases should have a tuberculin test and an x-ray to determine the presence or absence of infection.

TUBERCULIN TEST

This test, invaluable in determining tuberculous infection, suffers from general misinterpretation. The test gives either a positive or a negative result. A positive indicates that tuberculous infection has taken place. It gives no idea of the character of the infection, whether mild or severe, whether active or inactive, nor does it give any aid as to prognosis. It simply indicates that a state of hypersensitiveness of the tissues to tuberculin exists as a result of a previous infection. Tubercle is present somewhere in the body. In a very young child tuberculous infection is usually active, therefore if changes are found in the lungs or in the glands in association with a positive test, one may assume that these changes are due to tuberculosis, especially if they are characteristic. Moreover, a positive test can be obtained in practically all cases of tuberculosis in infants and young children. Tuberculin hypersensitiveness is depressed during intercurrent infections, as measles, influenza, and in overwhelming infection, as miliary, but a positive test can nearly always be obtained if a sufficient amount of tuberculin is administered. For this reason the Pirquet test has been discarded in favor of the more accurate intradermal test. One generally gives 1/100 milligram intradermally. If the test is negative it is repeated in a few days, using 1/10 milligram. If necessary one milligram may be given. Such dilutions may be made from old tuberculin, or the dilutions may be purchased from pharmaceutical houses. The stock dilutions vary greatly in potency. To insure accuracy in tests, each fresh bottle should be tested on a known positive reactor, and the dilutions should not be kept too long.

TYPES OF PULMONARY TUBERCULOSIS IN CHILDREN

The types of pulmonary tuberculous infection most frequently encountered in infants and young children are: 1. Primary infection. 2. Glandular tuberculosis. 3. Hilum tuberculosis. 4. Caseous pneumonia. 5. Miliary tuberculosis. 6. Epituberculosis.

The scope of this paper will not permit a detailed discussion of these various types, for which

special articles must be consulted. A brief summary of the essential clinical features will be given.

Primary Infection.—This occurs in the parenchyma of the lung. There are no physical signs except those of general infection, as stated above. The infection does not remain in the lung, but appears simultaneously in the tracheobronchial lymph glands. The primary focus can be detected later in the x-ray after calcification has taken place and it has healed.

Tuberculosis of the Tracheobronchial Lymph Glands.—The reaction in these glands occurs early and can be detected by the x-ray. There are no characteristic physical signs of enlargement of these glands. The D'Espine sign is not reliable and the enlargement is usually not sufficient to cause parasternal dullness. A brassy cough is often present and is a very important sign. The combination of the symptoms, fever, positive tuberculin test, and x-ray, will establish the diagnosis. The glandular reaction may produce other signs by extension or by pressure. Collapse of part of the lung or massive collapse of one whole lung may occur. The physical signs and x-ray findings in these are characteristic. The glands may press on the trachea producing a foreign body reaction with narrowing of the tracheal lumen, which can be detected by bronchoscopy. Air trapping, due to pressure of tuberculous tracheobronchial lymph glands, may be made out. All of these complications are relatively uncommon.

Hilum Tuberculosis.—By this is meant a lesion involving the parenchyma of the lung near the hilus. This is a characteristic reaction in the lung in young children. It is a question whether the process is an extension from a tuberculous focus in the lung or from the bronchial glands. This point is, however, academic. The reaction in the lungs presents in the x-ray a triangular shadow with the base at the hilus and is absolutely characteristic. Physical signs depend on the extent of the lesion. They may be lacking, or impaired percussion note and diminished breath sounds without râles over the involved area may be made out. There is no marked cough and no expectoration. The process may advance to caseous pneumonia or may clear. The x-ray picture is essential to the diagnosis. Successive examinations are necessary to follow the course of the disease and as an aid to prognosis.

Caseous Pneumonia.—In this condition there is high fever with signs of consolidation, impaired percussion note, diminished breathing or tubular breathing with râles. If excavation occurs there are signs of cavity. Cavity may be present in very young infants. The sputum in such cases is coughed up and swallowed, but it may be caught on a piece of gauze wrapped around a finger, or by passing a stomach tube and a slide preparation made. This is an important diagnostic measure which is not commonly employed. The condition must be differentiated from unresolved pneumonia by the course, tuberculin test, and the x-ray.

Miliary.—This may occur as (a) miliary tuberculosis limited to the lungs only; (b) generalized

miliary tuberculosis without meningitis; (c) generalized miliary tuberculosis with meningitis. The signs of a generalized infection are present with fever, usually enlargement of the spleen, and a polymorphonuclear leukocytosis.

There are usually no physical signs in the lungs in uncomplicated miliary tuberculosis. This is probably due to the fact that the small area of tubercle is surrounded by normal lung containing air. The tuberculin test is positive in the great majority of cases if sufficient amount of tuberculin be used (see above). The x-ray picture is characteristic. Infants with miliary tuberculosis may appear in good nutrition for many weeks and the process may extend over a period of months before death occurs. Where meningitis is present the symptoms and signs are those peculiar to this condition, and the spinal fluid is invaluable as a diagnostic aid, especially if tubercle bacilli are demonstrated.

Epituberculosis.—This condition has been described under various names—epituberculosis, Eliasberg and Neuland; recurrent hilum pneumonia, Wessler; paratuberculosis, Engel; perifocal infiltration, Wolff, etc. It is an allergic reaction occurring in the lung around a focus of tuberculosis. The affected tissues are filled with serum and lymphocytes, but there is no tubercle. Fever and the physical signs of consolidation are present. The children do not appear very ill. This condition must be differentiated from unresolved pneumonia and from caseous tuberculous pneumonia. The process clears slowly over a period of months or years and leaves no scar. The sputum, if present, is negative for tubercle bacilli and cavitation does not occur. A marked positive skin reaction is present, as the degree of tissue hypersensitiveness is very great. The prognosis is good.

Apical tuberculosis of the adult type with fibrosis, etc., does not occur in young children, but is seen in older ones, usually past ten years. The physical signs resemble those found in adults.

Mixed Forms.—Several types of lesion may be present in the same chest; thus, a caseous pneumonia with cavitation on one side, enlarged tracheobronchial lymph nodes on the same side, and generalized miliary throughout both lungs may be coexistent. This condition may be determined by x-ray.

SUMMARY

Pulmonary tuberculosis is a common infection in infants and young children, and can be recognized in its early stages. Early diagnosis is essential for appropriate treatment. The prognosis is good unless extensive disease has developed. The prognosis also depends on early removal of the child from the source of infection. A careful history as to exposure, a thorough physical examination, intradermal tuberculin test and x-ray offer methods of making an accurate diagnosis, both as to the presence of infection and the type of infection. The reaction in the lungs in the young child differs markedly from that seen in the adult with the same disease.

523 West Sixth Street.

REFERENCE

1. Krause, A. K.: Amer. Rev. Tuberc., 1926, xiv, 271.

DISCUSSION

LLOYD B. DICKEY, M.D. (Stanford University Medical School, San Francisco).—The difference between the clinical picture of pulmonary tuberculosis in adults and of that in infants and children should be obvious to all members of the medical profession who have seen both types of patients. Yet this difference is not fully appreciated, even among some workers in tuberculosis clinics. Students often come to the pediatric wards with the preconceived idea that if a child be suspected of having tuberculosis they should make careful inquiries, when taking the history, about hemoptysis, productive cough, night sweats, and rapid loss of weight. When performing the physical examination they expect to find changes in breath sounds, and postcough râles in the apices. The importance of calling attention to these discrepancies, such as Doctor Happ has done, cannot be overemphasized.

The laity as well should be educated to the differences. Most children examined for tuberculosis come to the physician because of a history of contact to the disease. Many more who should come fail to do so because parents do not appreciate the fact that significant symptoms in children are not the same as for themselves.

The classification that Doctor Happ uses is a very workable one for pulmonary tuberculosis in childhood, and offers a place for the many types seen. The disease, of course, may become latent in any of the first three types in Doctor Happ's classification.

✽

F. M. POTTENGER, M.D. (Monrovia).—In order to understand tuberculosis of childhood it is necessary to understand the *primary complex*. The primary complex consists of the primary node and the regional lymph glands which are always a part, in fact the most important part of the infection. In about 85 per cent of infections in childhood, the primary node is found in the lung.

The node in the lung may be extremely small, but the infection of the lymph glands is usually very severe, and the glands undergo marked enlargement. These foci both as a rule go on to caseation and end in calcification. In the neighborhood of the primary lung focus, and also in the lymph glands surrounding the regional glands which show most marked infection, other areas of mild infection are nearly always present. In case healing is not complete, these areas must be taken into consideration as foci for future disease.

In about one-third of the children infected, according to Aschoff, the primary infection heals completely. In two-thirds, healing does not take place immediately. In some of these the enveloping capsule remains incomplete and tuberculo-protein, as well as other toxins, escape; and gaining access to the circulating fluids produce symptoms.

The symptoms that occur in children as a result of an incompletely healed primary complex as a rule belong largely to the toxic group. Such a child has poor appetite and digestion; is usually nervous and irritable; is apt to sleep poorly; and usually develops a state of malnutrition. The reflex symptoms may or may not be recognizable. If the primary node in the lung is involved, as a rule there is a slight perifocal bronchitis, which causes slight cough; and on auscultation, râles or rhonchi may be heard. Hemorrhage, pleurisy, and sputum are rarely present.

The tuberculin test should be employed in all cases presenting such a toxic syndrome, because it may give information as to whether or not tuberculous infection is present. The x-ray should also be used

because it may show a primary nodule. It must be understood, however, that if the child is markedly cachectic, and its resistance is very low, and particularly if it is just recovering from some acute disease, the hypersensitivity of the cells to tuberculin may be temporarily in abeyance. It also must be remembered that the x-ray does not always reveal the primary node in the lung, or the infection in the regional lymph glands. Uncalcified foci and nodes do not show on the film. Positive information is the most valuable in children.

In dealing with the undernourished child showing symptoms here mentioned, it is necessary for physicians always to bear in mind that tuberculosis may be the cause. Contact is a very important thing in early childhood, but one must not forget that many children show no history of immediate contact, and still have active disease.

✽

E. W. HAYES, M.D. (Monrovia).—I want to express my appreciation to Doctor Happ for bringing before this section this very vital, but very much neglected and little understood, phase of our tuberculosis problem. A proper understanding of pulmonary tuberculosis and its relation to the child, I feel is the key to the solution of our tuberculosis problem in general.

The primary focus of infection in the lung may be a small focal or localized area, or it may be widely diffuse, involving a whole lobe or a whole lung. This primary focus may be, and often is, surrounded by an epituberculous infiltration. The lymph nodes draining these areas are invariably involved. Such nodes are not always demonstrable by x-ray, but autopsy or later x-ray study after calcium has been deposited will reveal the involvement of the glands.

These primary lesions occur usually in infants and young children, but may occur in older persons who have not experienced an earlier infection. They are most often basal in location. They are relatively benign and tend to clear up. Characteristic signs and symptoms are usually absent. They are usually detected by history of exposure, a positive tuberculin reaction, and carefully taken stereograms. Serial x-rays differentiate them from lesions due to secondary infections in that they tend to clear up. These primary lesions may extend into a serious involvement such as tuberculous bronchopneumonia or diffuse caseous lesions.

The factors which tend to cause these lesions to extend are repeated infections of massive doses, virulent infecting bacilli, poor resistance, and poor environment.

The primary lesions which go on to more or less resorption give us the picture of the so-called primary complex with the nodule in the parenchyma of the lung and calcified hilar glands, which is the lesion most often seen in older children. During this time, until the age of at least sixteen, such a child is very susceptible to subsequent infection with the tubercle bacillus, which tends to result in the development of a malignant type of disease.

The factors which tend to cause this primary lesion to be absorbed are high natural resistance, low virulence of the infecting bacilli, removal from subsequent infection, coupled with good environment and good general health.

Once the individual has passed through the stage of primary infection and has developed an allergy, as Doctor Happ has pointed out, and later develops the disease as the result of subsequent infection, he develops a different type of disease. This type of disease is chronic and most often apical, that is, it tends to localize and form scar tissue and does not tend to involve the hilar glands. This is the adult type of disease which may be found in juveniles.

THE LURE OF MEDICAL HISTORY

MEDICAL TERMINOLOGY

By E. H. OLMSTED, M. A.

Berkeley

I MUST make clear at once that I can consider the matter of medical terminology only from the point of view of a person who has had a merely classical education. Not very long ago the only classical reference I could think of which had even a faintly medicinal flavor was in Euripides' "Trachiniae," where the dying Centaur, as he hands the poison to the lady, says, "Keep it in a cool, dark place."¹ Since then I have recollected a passage in Aristophanes' "Frogs" which is concerned with an inconvenient but not dangerous intestinal disorder, but it is not very quotable.² In any case, my point is that the average student of the humanities would probably have read Hippocrates only in connection with Aristotle's theory of Catharsis in the "Poetics," and then he would have been concerned chiefly with the philosophical implications of the theory, which are a matter for nothing so much as pious regret to the medical commentator. Probably only a specialist in the history of science would have read Galen at all. It is perhaps a pity that the classicists do not take more advantage of this common ground, although they are right, it seems to me, in being more concerned with intrinsic than extrinsic values. The value of the classical authors and languages does not depend, in my opinion, upon their relation with or contributions to the things which preoccupy us nowadays. The only sound reason for learning Greek is that some of the things written in that language are still worth reading on their own account. I do *not* appear as an apologist for the classics on the ground that the language of modern science is a mosaic of Greek words and every medical practitioner must be familiar with a great many Greek and Latin stems or roots, even if there is some evidence that his knowledge does not extend to their inflections.

I have shown my colors and I must get on with the subject. Medical nomenclature is in a sense an epitome of the long and extremely varied history of the science and, in consequence, it acknowledges a great many linguistic sources. But the original vocabulary of European medicine was Greek, and medical nomenclature is still Greek in essence in spite of the Latinization which occurred in the Middle Ages and the later infiltration of terms from modern European languages other than English. It will be convenient to mention here the official Latinization of the related terminology of anatomy, known as the B. N. A., which was accepted by the Anatomical Society meeting at Basle in 1905. When you remember that it took a committee of the most distinguished anatomists in the world from 1889 to 1905 to complete their revision of what may be regarded as a mere department of medical terminology, it will be understood how very superficial are the criticisms that can be made in a paper of this kind. As to the work done by the committee, its confessed objects were to do away with duplica-

tion or rather multiplication of names, to make the terminology philologically correct, to make it simple and systematic in the sense that related terms should, as far as possible, be similar.

I think it will be agreed that there is plenty of room for the improvement of the terminology of medicine as a whole along all these lines, but it must be remembered that the position of anatomy is unique. It is the one branch of medical science of which the condition is sufficiently static to have warranted a more or less final revision. It is to be noticed that the committee made no attempt to settle the terminology in domains of lively contemporary clinical investigation, such as neurology, ophthalmology, otology, and laryngology, nor were the terms of microscopic anatomy included. As to the adoption of the Latin language by the B. N. A. it is to be remembered that the Latinization amounts in many cases to the Latinization of inflection. A word like sternocleidomastoideus has three, or should I say four, Greek roots.³ So anatomical terminology is only superficially distinct from the rest of medical nomenclature, insofar as its being principally Greek in origin is concerned.

We can collect some of the hoariest terms perhaps from the Hippocratic corpus. I must explain first, however, that the dialogues most generally admitted to be Hippocratic (*Epidemics i and iii*, *Prognostic* and *Regimen in Acute Diseases*) do not attach great value to diagnosis or classification. They attach more to prognosis, a sort of general pathology of morbid conditions, which assumes that there are symptoms or combinations of symptoms which point backward and forward to preceding and consequent conditions. Thus a physician well versed in prognosis could win a patient's confidence by describing the symptoms that occurred before he was called in. It is taken for granted that a Greek was argumentative even when ill, and a Greek doctor was bound to persuade his patient to undergo the proper treatment. Nevertheless many diseases are referred to by their names. We have ἀποπληξία, τέτανος, ἐρυσίπελας, διάρροια, δυσεντερία, φθίσις. It will be noticed that all these terms are descriptive and the classification of disease is according to symptoms. For example, τέτανος is the second perfect participle of τείνω, to stretch, and means tense, rigid. Another case of a merely descriptive word is τυφός which, in Hippocrates, corresponds neither to typhus nor to typhoid, as now distinguished according to the microorganisms which give rise to them. It probably indicates a form of remittent malaria, and the word τυφός simply describes nervous symptoms and means "stupor." Another form of remittent malaria is called φρενίτις, so the "itises" can trace back an ancient lineage to Hippocrates. I do not know whether it is worth while to point out that the Greek ιτις merely forms the feminine of a certain group of adjectives, and as the word for disease in Greek, νόσος, is feminine, the adjective in the feminine was used alone where νόσος was implied. So arthritis is for ἀρθρίτις νόσος and means disease of the joints, gout. Gout, by the

way, is from the Latin *gutta*, "drop," which has the same significance as "rheum" in rheumatism. Similarly with νεφρίτις, πλευρίτις and ραχίτις our "rickets" by vowel deterioration. All these words are found in Hippocrates, and on the analogy of them "itis" has become in modern medical terminology the regular name for affections of particular parts, and especially for inflammatory disease or inflammation of a part, although there is no etymological basis for this. The usage, however, regardless of etymology, is fixed, and the late formations attach "itis" as a living English suffix to Latin as well as Greek stems, *e. g.*, appendicitis. I think the most inelegant compound in this class that I have noticed is cowperitis, named from the glands of Cowper.

While I am on this subject, I might mention the adjective "diphtheritic," which by its form preserves the term used by Bretonneau of Tours in his original paper before the French Academy in 1821, "diphtheritis" or, in French, "diphthérie." Later, but not before "diphtheritis" had been taken into English and German medical literature, he published a new memoir substituting the name "diphthérie," probably because he realized that terms in "itis" are properly formed on names of the part affected, as in bronchitis, laryngitis, etc., while diphtheria is named from the tough membrane διφθερα developed in the course of the disease. In spite of the change from "diphtheritis" to "diphtheria," however, the adjective "diphtheritic" seems to be generally retained in preference to "diphtheric."

I seem inadvertently to have left Hippocrates a long way behind, but I shall return to him only to dismiss him. I do not feel competent to comment on Hippocratic surgery, but it is perhaps significant that gangrene is a perfectly good Greek word, γάγγραινα; and it has a variety of synonyms which have not affected our nomenclature. As for Aristotle, a discussion of his physiological opinions usually occurs under the heading "Errors of Aristotle," but he seems to have been better at anatomy, and I understand that the nomenclature of his account of the uterus has been retained in a more or less modified form to this day. The Alexandrian school, founded about 300 B. C., is represented by at least three anatomical terms: "torcular Herophili" (winepress of Herophilus) for the sinus described by him; "calamus scriptorius" for the depression in the fourth ventricle of the brain which seemed to resemble the pens then in use at Alexandria; and "duodenum," the δωδεκάδακτυλος ἐκφυσις, twelve-fingered extension, because it was twelve fingers' breadth long in the animals dissected by Herophilus. The terms now in use are, of course, Latin translations of Herophilus's Greek, as reported by Galen.

Greek continued to be the language of medicine under the Roman Empire, and Galen of Pergamum, whom we are perhaps accustomed to think of as a court physician at Rome, writes in Greek. About 200 A. D., however, the disuse of Greek began and with it coincides a period of depression in medical science. It is interesting that it was in the south of Italy, where Greek continued to be

spoken and written for centuries after it fell into general disuse, that you have the isolated phenomenon of Salerno, a flourishing medical school in the eleventh century, protected of course by the measure of security afforded by Norman domination.

Medieval Latin exerted some influence on the language of medicine but, like the Arabic that was to some extent adopted by, for instance, European anatomists, it did not survive in any considerable amount the revival of ancient learning which restored the original nomenclature of the Greek physicians. The word "quinsy" comes from the medieval Latin *quinancia*, or *squinancia*, which is an adaptation of the Greek *κυνάγχη* which in turn has *συνάγχη* as a constant variant reading. *ἄγχη* means constriction, strangulation. The *συν* would be intensive, while the *κυν* would be from *κύων* dog, and make it dog quinsy. I know that dogs may sometimes have a hoarse bark, but whether they are peculiarly liable to sore throat or not is beyond me. There are one or two other Latin words which I shall mention because the derivation seems amusing. "Musculus" means "muscle" in classical Latin, of course; but its original sense is as the diminutive of *mouse*; I suppose from the resemblance that certain contracted muscles would have to that animal. Incidentally the word *μῦς* in Greek from which we get our prefix *myo*, meaning "muscle," has the same two meanings as the corresponding Latin, so that the resemblance, such as it is, must have been noticed very early. Another that occurs to me is the word "shingles" as a synonym for herpes zoster. "Shingles" is a deterioration of the Latin *cingulum*, a belt, and so has the same significance as the zoster in herpes zoster. Herpes zoster is the term used by Pliny in his letters to describe the complaint, zoster being a transliteration of the Greek word for belt and herpes derived from the Greek *ἑρπω*, to creep.

I am reminded at this point of some lectures I once attended by a professor of history who was supposed to be discussing the colonization of America, and he became so involved in the details of the earliest and most hypothetical voyages of discovery that at the end of the course he was still talking about the Norse explorers and indeed left it doubtful whether any of them had actually arrived at their destination. I think that I shall make a forced landing in modern times before it is too late.

In the early nineteenth century word-coining becomes fast and furious to keep up with the advance of modern discovery. Ludwig's "kymograph," Bernard's "glycogen," Schwann's "metabolic" are all good Greek. We have also a set of new "ologies"—histology, cytology, and bacteriology. The last named resorts to Latin for the classification of bacteria into their four chief groups, and it is curious that *βακτηρίον* in Greek and *bacillus* in Latin are synonyms, both being diminutives of "rod." The word *ἀναίσθησις* is good classical Greek, but far beyond the scope of ancient Greek medicine. I think that the Greek physician must have had a particularly good field

for the exercise of his persuasive powers in surgery. In its modern significance, I believe anesthesia was first made familiar by Oliver Wendell Holmes. I think I may conclude this list of words, whose coinage furnishes landmarks in the history of medicine, with a few that also illustrate the convenience of the Greek prefix for making neat distinctions, *e. g.*, septic, antiseptic, aseptic, prophylactic, anaphylactic. There is nothing like a Greek prefix for combining clearness with brevity. The only thing which I find a little painful is the scientific habit of using adverbs instead of the preposition, which is the rule in classical Greek, *e. g.*, exotoxin and endotoxin, *ἐξω* and *ἐνδω* being adverbs never used in composition with a noun in classical Greek. They are accepted as prefixes by the English dictionary, of course, but the English dictionary is very generous in its concessions to science.

I feel sure that you will be disappointed if I do not make a few strictures upon the philological precision of medical terminology. I have not found the medical dictionary the sort of book which can be read very continuously, and I have been content to open it at random, as people used to open the Bible trusting to heaven for guidance. I have put my finger on a perfectly good "howler," the use of which is established, the word "ptomaine." It should be ptomaine, of course; but the original investigator of these toxins, an Italian, was apparently acquainted only with the nominative case of the Greek neuter noun, *πτῶμα*, a corpse; and he was unaware that the stem had a *t* in it. The English dictionary also bewails the barbaric pronunciation ptomaine, but says that the usage is too well established for an attempt to be made to change it. Cocaine for cocaine is an instance of the same barbaric false diphthong, but here there is no question of a missing consonant. The mistake about the missing consonant in Greek neuters seems to be a ready pitfall for the unwary, *e. g.*, the medical dictionary gives both dermatitis and dermatitis, the latter of course being correct, and the form in general use. I am not always sure that I can take the duplications of the dictionary as a basis for making a criticism. For instance, I am sure that you all say bacterioid rather than bacteroid, but the wrong form is in Gould's dictionary⁴ as well as the correct one. A nice example of a false quantity confirmed by usage is angina pectoris. In classical Latin the penultimate *i* is short.

Next we may pass to a consideration of hybrids. Strictly speaking, a hybrid is a word formed from a stem belonging to one language by applying to it a suffix or prefix belonging to another. One has to be rather careful here because the English dictionary has apparently decided that it is necessary to allow science some extra leeway in word formation, and while it censures "amoral" because it uses the Greek negative prefix *a* with a Latin stem *mos*, it regretfully allows "asexual" as against "nonsexual," because it is a biological term and has some currency. It recommends, however, that "asexual" shall not be treated as a precedent for future

word-making. Nevertheless I notice in the medical dictionary "avitaminosis," "avirulent," and "avenous," all on one page and all Latin stems with the Greek negative prefix *a*. As I have already pointed out, I have not made a statistical study of hybrids. I have been content to look in likely places and ordinarily I have not been disappointed. Take the Greek prefixes *homo* and *hetero*. You find not only "heteroinfection," but what is less excusable, "homolateral," when you have available the pure Latin "ipsolateral" with its opposite "contralateral." You get into similar difficulties with the suffix *ectomy*, Greek for "cutting out." I suppose the purists say "protophysectomy," but "appendicectomy" is also in the dictionary and is Latin and Greek, and I believe that the general term is "appendectomy," which looks like a case of an unnecessary surgical operation upon the word itself. It is an excision to secure a pronounceable word similar to that which gives you "pacifist" for "pacifistic." In other words, science is not the only offender.

A word which is not so much a hybrid as an abortion, if indeed it is ever used—it is in the dictionary—is "suggestotherapist." *Suggesto* is neither a Latin nor an English prefix as it stands.

Another point which I have heard raised, but about which I feel that I can be more liberal, is the matter of the preservation of diphthongs. It is said that you must spell orthopædic with an *æ*, lest, if you spell it with an *e*, the unwary should suppose that it has something to do with straight feet. But it seems to me that, as the word already illustrates, the transliteration of the Greek *αι* to the Latin *æ*, there is no reason why the Latin *æ* should not be Anglicized to *e*, particularly as you have the perfectly sound non-scientific precedent "pedagogue," which has not been spelt with a diphthong for a very long time. The same is true of the Greek diphthong *οι*, which is *æ* in Latin, and may be *e* in English, as in one of the alternative spellings of myxedema from *οἰδημα*, swelling. A spelling which I have seen in medical books and for which I see no justification, however, is "aneurism" for "aneurysm." The *y* is the usual Latin and English for the Greek *υ* in *ἀνεύρυσμα*, and the spelling with *i* seems to be illiterate and a confusion with the English suffix *ism*.

I shall not attempt to deal with duplication of terms, but I think that everyone will agree that the medical dictionary is badly overloaded. I can make a similar point with regard to duplication of prefixes. *Toxo*, *toxi*, and *toxico* are synonyms and exist side by side in toxiferous, toxophore, and toxicology. The derivation of the term "toxin" is from *τοξικὸν φάρμακον*, which means "arrow poison," *τοξικὸν* being the adjective from *τόξον* "bow," of which the plural *τόξα* is used for "bow and arrows." The idea of "poison" is in the *φάρμακον*.

Again, I shall not discuss the esthetics of medical terminology. I have left at home a formidable list of polysyllables ranging historically from adenochirapsology, which seems to be a relic of the days of touching for the king's evil to

the contemporary papilloadenocarcinoma or poliо-encephalomyelitis. The only thing I am sure of is that you are in a position to be much more sensitive than I am to the dire needs of expression which doubtless gave rise to these overwhelming compounds.

If medical terminology is systematic, I at least have not succeeded in discovering the thread that guides you through the maze. But it seems to be agreed that a technical terminology is necessary for precision in a science and, further, Greek has always been admitted to be an unsurpassed instrument of linguistic precision. It is obvious, too, that a common linguistic source for scientific terms is an advantage since a new term can appear simultaneously and with negligible variations in the literature of this continent and of the different countries of Europe. In any case the effect of jargon which is produced upon an outsider by technical diagnosis is most impressive. I select a brief one from a recent article in *Brain*, that of a "man in whom there was a circumscribed angioma arteriole racemosum of the left occipital visual cortex which had produced an incomplete right homonymous hemianopsia. Associated with the tumor was a well-marked auscultatory bruit." We have here a nice admixture of Greek with Latin, and I suppose that the "bruit" acknowledges the nationality of early experimenters with the stethoscope.

It occurs to me that there is a contrast to be made between the nomenclatures of philosophy and medicine. Philosophy has at least as much right as medicine to lay claim to an original vocabulary of Greek, but modern philosophers make no attempt to express themselves in a classically derived terminology. I do not quite know where the palm for unintelligibility should be awarded, but shall we say, that it is important for physicians to be intelligible to one another and unimportant whether they are unintelligible to the world at large, since medicine is an affair of experts. On the other hand, philosophers never hope to be intelligible to one another, particularly if they belong to unsympathetic schools, while they never cease to hope vainly that they will be intelligible to the world. I am inclined to think that there may be something in the idea of jargon after all, and it is not without significance that the etymology of the word "physician," is to be sought not in the Greek *ιατρός*, healer, but in *φυσικός*, which at first meant "naturalist," it is true, but as time went on acquired the connotation "sorcerer."

2583 Buena Vista Way.

REFERENCES

1. Euripides: *Trachiniae*. 685 pages. Τὸ φάρμακον τοῦτ' ἄντρον ἀκτίνος τ' αἰεὶ θεορμῆς ἀδικτον ἐν μυχοῖς σώζειν ἐμὲ
2. Aristophanes: *Frogs*, 198-99.
3. στήρνον, breast; κλεῖς, key, hook, clavicle; μαστοειδὴς μαστὸς breast, nipple, εἶδος, form, likeness.
4. There are a number of inaccurate derivations given in this dictionary, *e. g.*, *agrypnia* is given as "ἀ privitive; ὕπνος sleep"; it is from ὕπνος, sleep, and ἀγρόω, hunt, seek after.

CLINICAL NOTES AND CASE REPORTS

VAGITUS UTERINUS

REPORT OF CASE

By LINDSAY PETERS, M.D.

Alameda

ALTHOUGH crying of the child in the uterus was observed and noted in medical writings centuries ago, its occurrence is so infrequent that obstetricians of extensive experience, even in recent years, have doubted its possibility.

The *Quarterly Cumulative Index* for the ten-year period, from 1919 to 1928 inclusive, reports thirteen cases.

The following case is the first that I have encountered in a fairly large obstetrical experience covering thirty-two years:

REPORT OF CASE

A primipara, thirty-three years old, had nothing of especial interest in her past history. Last menstruation, June 29, 1928. The pregnancy was entirely free from complications. Labor having begun about 5 p. m., April 5, 1929, it ran a tedious course for more than twenty-six hours, and was terminated by forceps. Episiotomy was necessary before the head could be introduced into the vagina, and it was then first discovered that the occiput lay in the hollow of the sacrum instead of in an anterior position, as previously supposed. The head was manually rotated to a transverse position and, during the introduction of the first blade of the forceps, air was heard to enter the uterus with a sound of suction. Almost immediately afterward the child emitted a series of loud cries which were recognized and commented upon by the three assisting nurses, without any suggestion on my part. The first forceps seizure was a faulty one, so that the blades were removed and reapplied. Moreover the pelvic outlet was narrow (diameter between the ischia nine centimeters). Considerable difficulty and delay in the extraction were encountered, so that there was a lapse of twenty minutes from the time that the intra-uterine crying was heard until the child, a female weighing seven pounds and three ounces, was delivered, showing asphyxia pallida. Feeble gasps were made by the infant at long intervals. Keeping the baby wrapped and near an electric heater to conserve its body heat, gentle compression of the chest walls and slow, rhythmic tractions on the tongue were continued for at least half an hour before regular respiration began and the skin took on a pink color. Thereafter there were no convulsions, twitchings, vomiting, or other signs of brain injury, and the child nursed well, gained steadily in weight after the second day, and regained its birth weight by the tenth day. The mother had a normal puerperium and was discharged on the tenth day with a healed perineum.

In all reliable reports of vagitus uterinus the crying has followed some intravaginal manipulation—either application of forceps, version or vaginal exploration—but what produces the negative pressure which causes air to be sucked into the uterus has not been satisfactorily explained. May it not be that, following a contraction, relaxation of the uterine walls causes a negative pressure in the uterine cavity and the coincident introduction of the hand into the vagina permits an inrush of air? Of course, it cannot occur without previous rupture of the membranes.

In many cases long intervals—half an hour or even up to three hours—have elapsed between the

crying of the child *in utero* and its delivery in good condition, without asphyxia. On this account some have suggested the advisability of injecting air into the uterus in cases of threatened asphyxia, when prompt delivery cannot be made. Freed¹ cites a case in which "after an unsuccessful attempt at forceps delivery in the home, where repeated intra-uterine crying was heard, the patient was taken to a hospital and a live baby delivered by cesarean section."

Theoretically, intra-uterine crying would entail the danger of drowning in the amniotic fluid, but in practice apparently this has rarely, if ever, occurred.

The fetal mortality following vagitus uterinus is small, and in practically all cases is attributable to mechanical injury to the child in the efforts of delivery.

The phenomenon is of interest from a medico-legal standpoint, because it proves that, under certain conditions, a child may be born dead, with lungs inflated.

1361 Park Street.

REFERENCE

1. Freed, Frederick: *Am. J. Obst. and Gynec.*, 1927, Vol. xiv, p. 87.

COCCIDIOIDAL GRANULOMA*

TREATMENT WITH THYMOL

REPORT OF CASE

By A. B. STOCKTON, M.D.

San Francisco

THE following case of coccidioidal granuloma is deemed worthy of report because of the attempted treatment with thymol which appeared indicated in view of its reported antiseptic efficiency against fungi and yeasts. The use of the long-continued and large dosage of thymol without toxic symptoms was striking, and the quantitative excretion of the drug in the urine differed from that reported in the literature. These data may add to the general knowledge of the drug's action, and the negative results of treatment will not only emphasize the great difficulties involved in the therapy of this disease, but may also assist in the search for more effective remedies.

The trial of thymol in coccidioidal granuloma was suggested by the recent success reported by Myers and Thienes,¹ and Myers² in its employment in the treatment of actinomycosis.

REPORT OF CASE

The patient, an American farmer of fifty, from the San Joaquin Valley, was referred to the Stanford University clinics by Dr. Ehler Eiskamp of Watsonville, California, because of edema and multiple granulomatous lesions of the left foot and leg.

During employment in a sawmill thirty years ago the dorsum of the left foot had been pierced by a broken tooth from a circular saw. The wound healed promptly, but five years later a pustule developed over the site of the old scar; this pustule contained a small amount of yellow pus. During the subsequent sixteen years the pustule continued to recur every few weeks, but gave so little trouble that the patient

* From the Department of Medicine, Stanford University School of Medicine, San Francisco.

did not consider it necessary to seek medical advice. In 1925, or twenty-six years after the injury, instead of disappearing the pustule persisted, and the surrounding skin became red and tender. A pink, vascular, fungating growth surmounted the site of the pustule, and became encrusted with a friable black scab, which on removal left a bleeding surface. During the four months before entry into the hospital the patient had been prevented from working because of the swelling, soreness, and continuous burning pain in the left leg and foot.

The patient's past history was negative except that on two different occasions, eight years previously, he had had attacks of hemoptysis, and "coughed up a pint or more of blood." He also stated that he was subject to rather frequent colds, accompanied by cough.

On examination the patient did not appear particularly ill. The right side of the thorax failed to move as well as the left, and over the entire right side there was impaired resonance and distant breath sounds. Asthmatic râles were audible over both lung apices. The inguinal glands showed a moderate bilateral adenopathy. The left leg below the knee presented a red and inflamed appearance, and there was definite pitting edema. Over the dorsum and lateral side of the left foot, and between the toes lay extensive areas of irregular fungating tissue covered with black crusts. Pressure upon the crusts caused a creamy yellow pus to exude.

Laboratory examination disclosed a normal blood and urine. Repeated examinations and cultures of the sputum failed to show the oidium. X-ray examination of the involved foot and ankle revealed only soft-tissue swelling without bone involvement. A chest plate showed slight pleural thickening at both apices. The right side of the diaphragm was adherent to the chest wall at the costophrenic angle, and the mesial portion of the right diaphragm, remaining high on inspiration, suggested the presence of a cyst or tumor in the liver. Smears of the pus from the lesions on the foot showed a few spherules of the *Oidium coccidioides*. Cultures of the pus on plain agar, after a period of five days' incubation, produced a heavy growth of the typical moldlike organism.

Amputation of the affected leg was deemed advisable, but the patient refused surgery.

Treatment with Thymol.—The thymol was given in gelatin capsules. The administration was begun with 0.13 gram (2 grains), and the dose was increased each day for five days until it reached 2 grams (31 grains) daily. The latter dose was maintained during the next seven days. On the eighth day the dose was increased to 2.5 grams (38 grains), but because of slight nausea and pyrosis it was reduced to 1.5 grams (23 grains) on the ninth day. For the subsequent two days the two-gram dose was resumed, without the appearance of further symptoms. A total dose of 25.13 grams (387 grains) was administered in seventeen days. During medication the patient's breath, body, and urine possessed the characteristic odor of thymol, the odor of the urine being the strongest.

At the end of seventeen days on thymol there was neither subjective nor objective improvement in the patient's condition. Local application of thymol (5 per cent strength in alcohol) to the lesions produced no change whatever in their appearance, but caused the patient much burning pain in the extremity.*

Excretion of Thymol.—Using the method described by Seidell,⁴ daily estimations of the thymol content of the urine were made. Different known amounts of thymol added to urine, and estimated by this method, were found to agree within 2 per cent, thus giving a satisfactory degree of accuracy for my purpose. The results on excretion are presented in Figure 1.

* Following the treatment with thymol, the patient received ten subcutaneous injections of a preparation of colloidal copper, described by Jacobson,³ under the direction of Dr. H. E. Alderson of the dermatological clinic. No improvement was observed, and at the present time, six months after the treatments, the patient's skin lesions and his general condition are reported to be essentially the same as before therapy began.

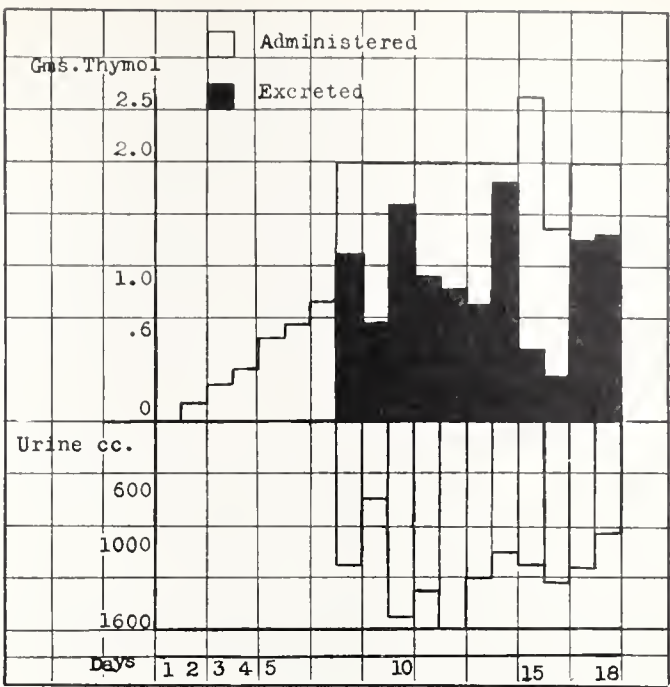


Fig. 1.—Showing results on excretion

COMMENT

The amount of thymol in the patient's urine varied widely from day to day despite the fairly uniform administration of the drug. This illustrates the irregularity in the absorption of thymol from the gastro-intestinal tract. The daily excretion varied from 0.35 grams to 1.8 grams, or from about 17 to 92 per cent of the daily dose administered, the average daily excretion being about 55 per cent. The total amount excreted during the seventeen days of medication was 12.33 grams, but the excretion was not estimated during the first six days, when the patient received a total of 3.13 grams. Therefore at least 56 per cent of the thymol was accounted for in the urine. It is possible that some thymol was excreted in the sweat and feces, but these excreta were not studied.

The average daily excretion, 55 per cent, was considerably higher than that reported by Seidell, who found that 31 to 46 per cent of the oral dose was excreted in the urine, and that about 50 to 70 per cent was destroyed or fixed in the body.

A search through the literature did not reveal a similar long-continued dosage of thymol as in the case here reported. In this case the dose of thymol exceeded 25 grams during seventeen days. The dosage of thymol recommended in the treatment of hookworm is 2.6 grams in two divided doses, followed by a saline purgative, and the drug is not repeated for seven to ten days. Barnes,⁵ who summarizes the use of thymol in eighty-two thousand cases of hookworm infestation, reports single doses of the drug as high as 4 grams (62 grains). In two instances death from thymol during routine hookworm therapy occurred. In spite of the continued administration of thymol in the case here reported no toxic symptoms other than pyrosis were observed.

Careful daily examination of the urine failed to show any signs of renal irritation, as indicated by the absence of casts or erythrocytes. There

were no remarkable fluctuations in blood pressure, pulse, respiration, or temperature and, except for a fleeting pyrosis on two occasions, the patient stated that he felt perfectly comfortable. No depression of the heart⁶ was observed.

THYMOL ON THE OIDIUM IN VITRO

In the culture of *Coccidioides immitis* no special media are required. A luxuriant growth appears on plain agar after five to seven days' incubation at 37 C. Bump⁷ describes the cultural characteristics of the organism, and these need not be repeated here.

The effect of different dilutions of thymol was tried upon *Coccidioides immitis* *in vitro*. Plain agar cultures of the organism were exposed to dilutions of thymol in water ranging from 0.02 to 0.2 per cent for periods of from one-half to four hours. Subcultures were then made from the original tubes. No organisms which had been exposed to thymol dilutions exceeding 0.05 per cent grew in subculture, whereas heavy growths developed in all control tubes.

Thymol, therefore, appears to act effectively as an antiseptic against the organism *in vitro*, but the effective concentration could not occur in the body tissues during life without toxicity. A concentration of 0.05 per cent would be the equivalent of 30 grams (about one ounce) in the tissues of a 60 kilo (120-pound) man, and this concentration must inevitably prove fatal. Assuming complete absorption of the highest dose administered to this patient (2.5 grams), the tissue concentration of thymol would have been approximately 0.004 per cent, which is less than one-twenty-fifth of that actually required. Since not all the thymol administered was absorbed, the tissue concentration must have been much less than 0.004 per cent. This is at least one reason why the thymol did not prove effective.

Another factor entering into the treatment of the disease is the penetration of the capsule surrounding the organism in human or animal tissue. Judging from the failure of thymol applied locally to improve the appearance of the lesions, even higher concentrations are unable to penetrate the capsule in spite of the lipoidal solubility of the drug. *In vitro* the capsule is absent, and the thymol does not meet with this obstacle. Large doses of iodid might assist in the breaking down of the capsule *in vivo*, and this drug should be tried in conjunction with thymol.

Unfortunately no opportunity offered itself for trying intravenous antimony and potassium tartrate as recommended by Guy⁸ and by Tomlinson.⁹

PORTAL OF ENTRY OF THE INFECTION

Although the onset of the disease in this patient could not be definitely established, the infection apparently was one of long standing. There had been a lesion of the left foot for thirty years, and eight years previous to the hospital entry there was a history of chronic cough and pulmonary hemorrhage. Four years before the present time a striking change in the character and appearance of the lesions occurred. It is, therefore, impossible to conclude whether the organism found its

portal of entry through the foot, or whether it was primarily a pulmonary infection. Several authorities^{10 11} are inclined to the belief that the infection is always primarily pulmonary, and that the peripheral lesions are metastatic.

SUMMARY

1. A patient showing granulomata of the leg, and possible visceral lesions due to *Coccidioides immitis*, failed to respond to treatment with large doses of thymol. Local treatment of the lesions with thymol in 5 per cent strength was also ineffective, although the organisms *in vitro* were killed by concentrations exceeding 0.05 per cent.

2. A total of 22 grams of thymol was administered over a ten-day period without symptoms of toxicity.

3. The urinary excretion of the thymol varied from 17 to 92 per cent of the daily dose administered; the average daily excretion was 55 per cent. This excretion is greater than has been hitherto reported. The marked fluctuations in the daily excretion suggest considerable irregularity of absorption of thymol from the alimentary tract.

I am indebted to Dr. P. J. Hanzlik of the department of pharmacology for helpful advice and criticism throughout the preparation of this paper.

Stanford University Medical School.

REFERENCES

1. Myers and Thienes: J. A. M. A., 84:26:1985, June 1925.
2. Myers: J. A. M. A., 89:22:1834, November 1927.
3. Jacobson: California and West. Med., 27:3:360, September 1927. Ibid: 29:6:393, December 1928.
4. Seidell: U. S. Hygienic Lab. Bull., No. 101, August 1915.
5. Barnes: J. A. M. A., 79:12:964, September 1922.
6. Heathcote: J. Pharmacol. and Exper. Therap., 21:177, April 1923.
7. Bump: J. Infec. Dis., 36:561, June 1925.
8. Guy: Arch. Dermat. and Syph., 16:308, September 1927.
9. Tomlinson: J. A. M. A., 91:13:947, September 1928.
10. Proescher, Ryan, and Krueger: J. Lab. and Clin. Med., 12:57, October 1926.
11. Pruett: J. A. M. A., 81:19:1607, November 1923.

COMPLETE OBSTRUCTION OF ESOPHAGUS DUE TO BOLUS OF FOOD*

REPORT OF CASE

By RULON S. TILLOTSON, M.D.

Woodland

F. G., age 16, walked into the San Francisco Hospital the morning of June 13, 1929, with the complaint of inability to swallow solid food or liquids since the preceding evening. At that time while eating his evening meal, which included beef stew among other things, his food seemed to stop suddenly on its way down. On continuing to eat he regurgitated each new portion taken. No pain was noted except for a little feeling of discomfort vaguely referred to the substernal region. He retired that night giving the matter little thought. On the following morning, on account of the thirst and hunger which he was unable to relieve, in addition to the fact that he felt

* From the Otolaryngological Department of the San Francisco Hospital, Stanford University service.



Fig. 1.—Bolus of food removed from the esophagus. Impaction of the food mass in the constricted portion of the esophagus had formed a cast of its lumen.

amount of barium mixture and examined under the fluoroscope. The barium was noted to come to a complete stop at the level of Ludwig's angle or second rib anteriorly; none trickled beyond this point toward the stomach. An esophagoscopy was done according to the Jackson technique to investigate the character of the obstruction. A body suggesting the appearance of meat was noted in the line of vision through the esophagoscope after passing beyond the cricopharyngeus muscle down into the thoracic esophagus. Using Tucker's bead forceps the food mass was removed in one piece. Impaction of the food material in the constricted portion of the esophagus had formed a cast of its lumen, as shown in Figure 1. The food bolus appeared to consist principally of meat, probably some of the beef stew eaten the preceding eve-

something had gone wrong, he came to the hospital, accompanied by an older brother. On learning his complaint, he was asked to try to drink some water. After taking two or three swallows he promptly regurgitated it. On questioning him the fact was brought out that at four years of age he swallowed some lye, following which he was operated and fed for some time through "an opening made into his stomach." Later he received a series of dilators which he described as being pushed down his throat by the doctor.

On obtaining this history he was given a small

ning. Shortly following the esophagoscopy he was allowed to drink a glass of milk, which he did without difficulty and with considerable satisfaction. Figure 2 was taken the day following the removal of the obstructing food bolus, and shows the site of the cicatricial stenosis where the bolus of food was lodged.

Doctor Chevalier Jackson,¹ in his textbook on bronchoscopy and esophagoscopy, states, among other facts, that the accidental swallowing of lye is the most frequent cause of cicatricial stenosis of the esophagus. The location of these strictures, in the order of frequency, are at the crossing of the left bronchus, in the region of the cricopharyngeus muscle and at the hiatal level.

Blind methods of dilatation are extremely dangerous on account of the possibility of perforating the esophageal wall. Where the stenosis is of such extent as to interfere with the ingestion of the required amounts of liquid, gastrostomy should be done at once and the esophagoscopic treatment should be postponed until the water hunger is relieved. Esophagoscopic bouginage when no gastrostomy has been done has been proved in his hands the safest and most successful method of treatment.

Bouginage through the esophagoscope with gradually increasing sizes of bougies will be carried out at four to seven-day intervals in this case as recommended by Jackson.

Woodland Clinic.

REFERENCE

1. Jackson, Chevalier: Textbook of Bronchoscopy and Esophagoscopy, second edition, page 339.

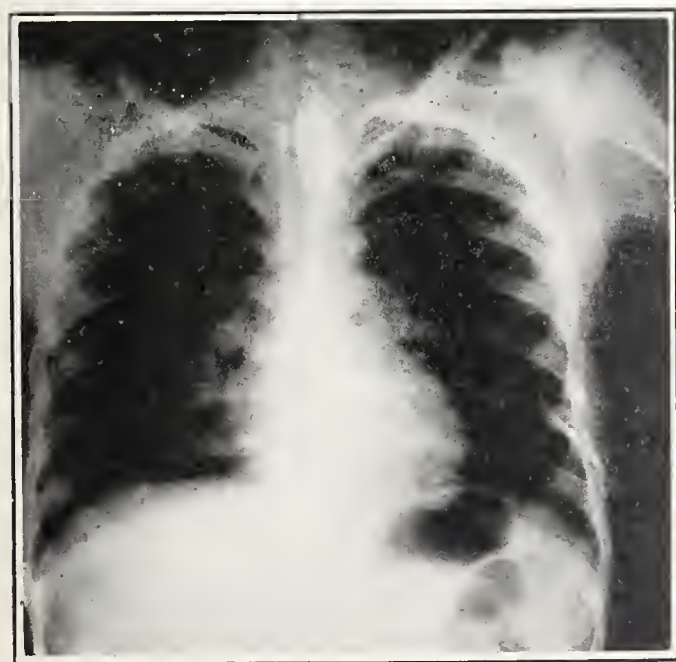


Fig. 2.—Film taken with barium mixture in esophagus, day following the removal of the bolus of food, shows site of stricture where food was lodged. Film by Doctor Hawarth.

Ether Supply Watched Closely by Government Chemists.—The recent seizure of ether at Boston and Providence by the Food, Drug, and Insecticide Administration of the United States Department of Agriculture has brought from the department the statement that the sampling of ether on the market is carried on continuously and extensively by inspectors and chemists of the Food, Drug, and Insecticide Administration. Regulatory control of ether to prevent the use of the substandard product is faced with certain difficulties, say officials of the department charged with the enforcement of the Food and Drugs Act. The technique of the manufacture and packaging of ether has not yet been perfected to a point where there is absolute assurance that the ether meeting every requirement at the time of packaging will not upon standing deteriorate to a point where it will not meet the standard of the United States Pharmacopeia. Progress has been made in the development of manufacturing technique, but the problem has not been finally solved, the officials say. This situation necessitates very frequent and comprehensive inspection in order to prevent the consumption of substandard ether.

No one connected with the Department of Agriculture would permit himself to be quoted as saying that ether containing peroxids, which is the usual criterion of deterioration, would endanger the lives of patients on the operating table. It was said that there is a belief in certain quarters of the medical profession that such deteriorated ether is unsafe. However, the regulatory officials say it is not necessary for them to prove that such ether may be harmful to the patient before they can remove it from the market, because the Federal Food and Drugs Act sets up the specifications of the United States Pharmacopeia as its own standards of purity, and ether failing to meet those standards is in violation of the act if shipped within its jurisdiction. The officials state that for several years the utmost care has been maintained to safeguard the country's supply of anesthetic ether and that the seizures recently made in the New England cities are simply a few of the numerous detentions that have been made. Thousands of samples of ether have been tested in connection with this survey during the past year, and testing will be continued.—*United States Department of Agriculture.*

BEDSIDE MEDICINE FOR BEDSIDE DOCTORS

An open forum for brief discussions of the workaday problems of the bedside doctor. Suggestions for subjects for discussion invited.

PRURITUS OF THE ANUS AND VULVA

From a Proctologist's Viewpoint

M. S. WOOLF, SAN FRANCISCO.—Pruritus is a name only of a symptom, namely, itching. It is analogous to pain and thus might be supposed to have various origins. This symptom may actually be obscured by pain due to a superadded inflammation resulting in cracking of the skin and subsequent infection. Often this is due to scratching and not infrequently to the application of irritating drugs so that an eczematous dermatitis assumes the most important rôle. The condition will undoubtedly be recognized and be wisely treated as such, either by lotions, powders or ointments, whichever are felt suitable. When the patient is worn out by nervousness or sleeplessness, since the itching predominates at night time, hypnotics should not be withheld.

In the proctologic field three distinct groups of pruritus may be recognized. Two of them are based, respectively, on either definite constitutional or local disease. In the former we may include such conditions as diabetes, chronic rheumatic infections, gout, hypertension, and metabolic or endocrine disturbances, such as overweight, exophthalmic goiter, and perhaps senility. In the latter the causes are anal ulcer and fissure, cryptitis, fistula, and other chronic diseases causing external discharge. Even a leakage of petroleum taken as an intestinal lubricant may cause itching. Hemorrhoids, anal polyps, and hypertrophied papillae fall also into this second group since they cause an irritation within the anal canal and may give rise to that vermicular sensation which the patient interprets as worms. Parasites, of course, must be excluded in any investigation. Pruritus originating from pathology in the two groups discussed is amenable to treatment. Its pathology is known. The third group is termed idiopathic since a pruritus exists, but no cause for it can be discovered.

Whatever the origin of the pruritus, three types of skin result. First, that in which there is an unbroken surface which appears normal, or merely leathery and parchment-like. Second, that with a white, soggy, edematous and cracked surface, extensive perianal folds and sentinel piles. The change may have invaded the perineum, scrotum, and adjacent fleshy folds. The third type of skin presents an extensive and acutely inflamed edematous and fissured surface. When an eczema is present it is proper to use the current methods for its relief. All excrescent folds retaining perspired secretion which becomes rancid and irritating are to be clipped away radially from the anal orifice. This procedure will cut many nerve filaments and diminish itching. The skin being again healed, or initially, if it originally showed little or

no pathology, pure phenol may be painted not into, but half an inch around the orifice. The skin will also by this means be rendered anesthetic and will exfoliate. After two or three days of soreness a new and better vascularized epidermis will have taken the place of the old, and certainly the patient will not scratch the part for many days. During healing, the patient should have frequent hot sitz-baths, followed by the application of simple boric ointment. The acute condition of the third type is treated as an acute inflammatory condition by hot baths and emollient fluid applications, such as lead and opium wash, or lime water. Later, after healing, in all cases a most careful hygiene is recommended. Baths, especially after defecation, and a suitable antiseptic powder are prescribed. A good powder is calomel, zinc oxid, and starch in the proportion of one, two, and eight, respectively.

X-rays and ionization are useful adjuncts in the treatment of pruritus. The latter requires a special apparatus, but with it I have had some success. Some proctologists use alcohol and dilute hydrochloric acid to destroy nerve endings beneath the skin, but I have had no reason to use these, as treatment according to the methods mentioned earlier has cured the majority, and relieved most. In the most inveterate and intractable forms a direct cutting of the nerves by undermining the perianal skin more certainly attains its end and is, therefore, preferable.

* * *

From a Gynecologist's Viewpoint

GEORGE JOYCE HALL, SACRAMENTO.—Pruritus vulvae, etiologically, is divided into three large groups—local, constitutional, and nervous. In the first two it is a result of other primary factors; in the third a pathologic condition of the nerve endings. Many years have passed since it has been first so considered, and to my knowledge no better "excuse" has been formulated.

The greater number of cases seen by a gynecologist are due to purely local conditions of the external genitals and genital canal. And most of these really have less itching than burning, or small areas of acute tenderness and pain. So that, as pruritus means an itching condition, it is not proper to call these irritated vulvae with smarting, burning discomfort, cases of pruritus at all. Pruritus is a general term for itching. Its derivation does not mean pain or burning, and as most cases of cervicitis, endocervicitis, vaginitis and other allied conditions cause irritation and possibly pain and but rarely itching, I personally do not approve of classifying the results of these cases as pruritus vulvae.

Pruritus occurring secondary to diabetes, ic-

terns, or other constitutional diseases, or as a result of anal pathology, is not to be considered here.

Any itching that is caused by gonorrheal vulvitis, cervical lacerations, erosions (so called), Bartholinitis, endocervicitis, endometritis, cystitis, and urethritis is, of course, relieved by properly treating the causative condition. This is only transitory in character. General cleanliness is a big help. Various mild lotions, unguents and emollients are beneficial, although occasionally there is a need of phenol, cocain and similar local anesthetics, applied externally for a short time.

There are a number of cases in the elderly patients who are beyond the menstruating age and whose genitals are all in the atrophic period who have a pruritus that requires radical measures if relief is obtainable at all.

In the menopausal age or climacterium it has been recognized that actual changes histologically take place, termed vulvitis pruriginosa. There must also be considered the entity known as kraurosis vulvae in which there is an actual atrophy of the corium which later becomes sclerotic. Whitish spots appear and a general atrophy of the genitals and vaginal lining occurs. Vaginitis senilis is often accompanied by a stubborn itching.

These latter types are relieved with difficulty. It is occasionally considered necessary by surgery to sever the nerve endings or nerve supply of the vulvae and sometimes a portion of the vaginal canal. Many sufferers are permanently relieved, although if extensive undermining is done, healing occurs very slowly and, of course, with increased and consequent contraction.

* * *

From a Dermatologist's Viewpoint

ERNEST DWIGHT CHIPMAN, SAN FRANCISCO. Pruritus, in its strict sense, is only a symptom. Many dermatologic authors, however, employ the name to denote a disease in which primarily there are no lesional changes although various consecutive reactions may occur.

While itching may be present as a symptom in many conditions due to mechanical and chemical irritants as well as to the action of bacteria, fungi, and animal parasites, this discussion will be limited to those cases in which the pruritus has preceded and not followed the visible change in the skin about the anus or vulva.

From the pathologic viewpoint we must regard pruritus as a sensory neurosis. When medical aid is first requested, secondary changes have usually already occurred. These changes in pruritus may vary from the mildest type of simple excoriation to the most severe inflammatory form in which the skin shows a whitish, sodden appearance with deep folds which retain a foul-smelling secretion, together with fissures, crusts, induration, and pigmentation.

In pruritus vulvae the lesions also vary in severity from the superficial results of scratch marks to marked red, tumid and crusted re-

actions. The mucocutaneous tissues may exhibit extreme degrees of swelling.

There are three indications to be met: first, to relieve the symptoms; second, to restore the damaged tissues to a normal state; and third, while this is in process, to ascertain if possible the cause.

For the relief of the itching countless topical remedies have been suggested, proof sufficient that there is no specific. Perhaps the most generally useful is phenol. Bronson recommended the following: \mathcal{R} —Phenolis 8, liq. potassae 4, ol. lini 30. The use of 25 per cent phenol seems heroic, but its action is so tempered by the oily vehicle that it remains short of being caustic. Moreover, used on limited areas for limited times, it is not toxic. Having prescribed this many times, I can recommend it as more often helpful than any other combination I have tried.

Various preparations of chloral, camphor, thymol, hydrocyanic acid, salicylic acid, paraesthesin, and tar are all occasionally of service. Internally aspirin will sometimes give relief.

The x-ray, while often wonderfully effective, should be used with great caution. The subject of any pruritus is prone to travel from office to office and may easily understate the amount of radiotherapy previously used, with results which might react unfavorably upon both patient and operator.

The local treatment of the tissues involved varies with the reaction. In all cases the removal of retained secretions and debris from the folds of the skin is of capital importance. This is accomplished by the use of such preparations as oronite or carbon tetrachlorid. Occasionally areas of thickening occur which appear almost verrucous. For these such keratolytics as salicylic acid or resorcin should be used, the strength and duration of application to be regulated by the degree of thickening. Fissures call for the local application of a 10 per cent solution of silver nitrate.

For areas of slight infiltration various tar preparations are often valuable. In general, 5 per cent pix liquida in zinc ointment is efficacious. Sometimes pure crude coal tar will achieve striking results. The choice of the remedy, as well as the decision as to its strength, calls for a sure therapeutic touch. In doubtful cases one seldom errs in using, until the individual tolerance is learned, such a mild formula as the tar in zinc ointment just mentioned.

It is in the search for a cause that the active coöperation of the various specialists should be invoked. The organic changes of the menopause, pregnancy, constipation, cryptitis, hemorrhoids, fissures, vesical calculi, malaria, carcinoma, tuberculosis, prostatitis, cystitis, diabetes, and nephritis are a few possible etiologic factors the grouping of which suggests plainly the need for frequent consultations between the various specialists in the successful treatment of this condition.

From a Neurologist's Viewpoint

ROBERT L. RICHARDS, SAN FRANCISCO.—Since pruritus manifests itself as a sensory nerve change, belonging in the group of paresthesias rather than hypo- or hyperesthesias, one might class pruritus superficially as a nervous disease. Indeed, success in treatment depends entirely upon how much you can relieve the sensory nerve from irritation and how much you can relieve the nerves of hypersensitivity. Even in senile and other atrophic changes involving the anus or vulvae and associated with itching there is no definite nerve distribution or gross pathology discoverable by the usual methods of investigation. Nor is there any evident change in any spinal cord center. Consequently one is thrown back upon cell changes resulting from toxic irritations, or varying amounts of blood supply. The usual classifications of pruritus ani et vulvae also suggest this classification, viz.:

1. Toxic or metabolic pruritus including diabetes, gout, uremia, jaundice, arteriosclerosis, intestinal stasis, and various foods, etc.
2. Dermatoxic pruritus including eczematous troubles, local irritant dermatitis, etc.
3. Parasitic, including itch mites, lice, fungi, etc.
4. Neurotic, meaning what remains when you have no evident general or local cause.

Quite naïvely, too, writers state that when you encounter this persistent disabling malady you really find little other than the result of scratching locally as far as 2 and 3 are concerned. Certainly the general toxic conditions under 1 do occur, in the majority of instances, without any of these pruritic manifestations. Hence, one is forced to admit in this problem, the importance of the individual nervous system both generally as to personality, and locally as to its sensitivity of nerves to certain irritants of both local and general origin. The frequent lack of success or delay in the medical treatment of pruritis ani et vulvae is easily understood when one considers the wide implications of the subject and the tendency to evade too much effort. Anesthetic and destructive agents will frequently relieve temporarily the agony of itching in such positively erogenous areas. This has led to even the subcutaneous severing of nerve endings by operative interference, but the success has been temporary. Long continued, painstaking detailed care has given much better results. Besides special measures at times such as described by the writers in this symposium it means that daily detailed care as to cleanliness, kind of toilet, clothing, and frequency of attention each day is necessary. In fact, there is no dramatic operative method in managing pruritus.

Besides all this, however, there is the need of caring for the personality disturbances rarely absent in these neurotic itchers. Before they itched, they jumped at and suffered from noises and sensations. Before they itched they showed undue fatigue, insomnia, and nervous heart action. With the itching established they will

rarely, or only accidentally secure permanent relief unless these personality problems are also relieved. It is especially neurasthenic fatigued neurotics that manifest such a host of paresthesias and remarkable sensations both on the outside and the inside of the body. Cardiologists estimate their nervous heart cases as about 80 per cent of their clientele and these patients can describe heart sensations never dreamed of in any medical writing. "Tingling," "pricking," "formicating," "pressure," "squeezing," "banding," "quivering," "trembling," "gripping," "indescribable" are some of the terms used besides "itching," in describing these sensations both on the outside and the inside of the body. I have seen these cases drift from one coast to the other through the hands of good specialists and secure relief when the neurosis side was finally actually relieved. Treatment of these people requires not only rest, by relieving them of every burden that they may march more easily, but also re-educational measures, by individualization, and changing of the action pattern so that there is reasonable prospect of successful, happy, comfortable personality growth.

The X-Ray Film Hazard.—The fire hazard of x-ray films has long been known. Certain precautions have been specified by fire underwriters, and various municipalities—Minneapolis, for instance—have stringent rules for storage of x-ray films. Some municipalities have had special regulations to cover x-ray film storage and to date have adopted no satisfactory regulations. It is true that, as a fire hazard, x-ray films stored in small quantities may not be so great. There was evidence, however, in the Cleveland Clinic building that the gases evolved produced a hot flame. With their explosive possibilities and the danger of evolving lethal gases, their menace to human life is great. Possibly life insurance companies will have to be depended upon to procure proper action.

The report mentioned proposes two reasonable methods of assuring proper safeguards in the storage of films. One is the compulsory substitution of a type of film which does not possess the dangerous qualities of the nitrocellulose film commonly used. The other is the adoption by states and municipalities of stringent requirements covering storage and handling of the present films. Storage in outside buildings and well removed from other structures such as the method used at the Mayo Clinic is preferable. Where this is not feasible the regulations of the National Board of Fire Underwriters, which require outside vents, automatic sprinkler protection, and so forth, should be carried out.

The Public Health Council of New York State, acting on the recommendation of a special committee appointed by Acting Governor Lehman, has prohibited the sale and distribution of the ordinary nitrocellulose films in the state except in New York City, effective September 1, 1929. Similar action will doubtless be taken in New York City also. This means that in New York the acetate films will replace those now in use.

It has been said that the detail furnished by the acetate films is inferior. They are more expensive, owing to certain difficulties in manufacture. Certain large hospitals in the East, however, have used them exclusively for some time. It is rumored that the acetate films are likely to be made as efficient as the dangerous ones. That being the case the slight additional cost should not prevent their substitution.—*Minnesota Medicine*, August 1, 1929.

California and Western Medicine

Owned and Published by the
CALIFORNIA MEDICAL ASSOCIATION
Official Organ of the California, Utah and Nevada Medical Associations
FOUR-FIFTY SUTTER, ROOM 2004, SAN FRANCISCO
Telephone Douglas 0062

Editors { GEORGE H. KRESS
Associate Editor for Nevada { EMMA W. POPE
Associate Editor for Utah HORACE J. BROWN
J. U. GIESY

Subscription prices, \$5.00 (\$6.00 for foreign countries); single copies, 50 cents.
Volumes begin with the first of January and the first of July. Subscriptions may commence at any time.
Change of Address.—Request for change of address should give both the old and the new address. No change in any address on the mailing list will be made until such change is requested by county secretaries or by the member concerned.
Advertisements.—The journal is published on the seventh of the month. Advertising copy must be received not later than the 15th of the month preceding issue. Advertising rates will be sent on request.
Responsibility for Statements and Conclusions in Original Articles.—Authors are responsible for all statements, conclusions and methods of presenting their subjects. These may or may not be in harmony with the views of the editorial staff. It is aimed to permit authors to have as wide latitude as the general policy of the journal and the demands on its space may permit. The right to reduce or reject any article is always reserved.
Contributions—Exclusive Publication.—Articles are accepted for publication on condition that they are contributed solely to this journal.
Leaflet Regarding Rules of Publication.—California and Western Medicine has prepared a leaflet explaining its rules regarding publication. This leaflet gives suggestions on the preparation of manuscripts and of illustrations. It is suggested that contributors to this journal write to its office requesting a copy of this leaflet.

EDITORIALS

A BASIC SCIENCE LAW—WOULD IT
BETTER CONDITIONS IN
CALIFORNIA?

Reason for Considering a Basic Science Law.
If we affirm that a basic science law for California would serve our public health standards to better advantage, it would be proper for the nonsectarian medical profession of California to prepare a basic science bill that could be presented to the 1931 legislature.
If, however, we believe that a basic science law could be of no special value to the members of the lay public and of the medical profession, then the time necessary to the study and consideration of such a proposed basic science statute might well be given to other matters of nearer and greater importance to the profession.
Because the subject is one of great importance, it is again discussed in this column. Readers who wish to revive their knowledge of basic science laws are referred to articles in this column which appeared in the October 1927 number, page 525, and in subsequent issues.

* * *
Interesting Analysis of Basic Science Laws by H. E. Kelly, Esq.—An interesting and plausible discussion of basic science statutes from the pen of H. E. Kelly, Esq., who has been legal adviser to two state medical boards, was printed in the

August 17 issue of the *Journal of the American Medical Association*. Mr. Kelly himself by no means seems convinced that these new basic science statutes would bring about an improvement in present medical licensure conditions, unless it perhaps might be in those states which are suffering from the evils of the multiple board system. California, with its medical or non-sectarian, its osteopathic, and its chiropractic boards, is a good example of a state with multiple examining boards.

* * *

California's Multiple Examining Boards.—Each of these California boards, according to the powers conferred upon it by the legislative authorities, lays down its own standards of preliminary and of professional education and training, and determines for itself whether or not the applicants who seek licenses from it possess the proper qualifications for licensure in its group. It is to be remembered, however, as a matter of fact, that no matter how the laws restrict the nature of practice that such written limitations are as a rule disregarded in active practice. The majority of osteopaths and chiropractors probably practice medicine and surgery far beyond the limits outlined in the laws recognizing their groups.

The major item of interest to members of the medical profession is not whether these various cultist boards should exist, for they already do exist; and all their various licentiates have been given legal rights that in a general way cannot now be taken from them by new legislation. Nor is the obligation which the nonsectarian profession here faces primarily one of betterment of the standards of the different cultist boards. For intrusion or interference by the nonsectarian profession with the workings of cultist boards would not only be not welcomed but probably would be much resented by the licentiates of cultist boards. Moreover, if such objection to interference by the nonsectarian profession were carried by the cultist boards to the people for ballot decision, the voters of California (who through initiative acts have given the osteopathic and chiropractic boards their present laws), would almost to a certainty uphold these cultist boards in opposition to their outside interference.
In the opinion of most nonsectarian physicians the recognition of cultist boards—and that comprehends the recognition of different standards of preliminary education and professional qualifications—does not make for the best protection of the public health. Of course it should be self-evident that all practitioners should be made to have the same relative amount of preliminary education and professional training, no matter what their beliefs concerning disease and injury, or what their therapeutic and other practices might be. Nevertheless, with many citizens it is not self-evident, and an attempted clarification to better educate the laity would probably resolve itself into a discussion about as profitless as one on religion, when the opposing sides have no common ground to stand upon.

Mr. Kelly's Acknowledgment and Appeal.—Mr. Kelly, in his opening paragraph, acknowledges that in many states the cultist groups have been successful in the last thirty years in establishing for themselves a very considerable legal status. In California we might add that it is a firmer legal status in one sense, than that possessed by the medical or nonsectarian board, since the laws governing the medical board can be changed by any biennial legislature, whereas with the osteopathic and chiropractic laws, which were brought into being through the initiative, no legislative authority other than the people of the state themselves can intervene.

Mr. Kelly's closing paragraph has as its sub-head, "Need for Organization in the Medical Profession." In this paragraph he summarizes some of his previous viewpoints and suggests that the profession "must organize to educate the people and inform the legislators" by giving of their funds and influence and using the same to carry on a propaganda that will make our citizens in the different states refuse to establish separate licensing boards for practitioners of cultist medicine, and so on.

Now an appeal like this of Mr. Kelly's looks well in print, but in view of what has already taken place in the legal recognition of cultist practitioners from one end of the country to the other, how can any man who is familiar with practical politics and the psychology of the people in relation thereto seriously contend that real improvement would result from an expenditure of massive funds and educational efforts on the laity, which funds are yet to be collected from physicians, and which, frankly, never could be collected.

* * *

A Criticism of Mr. Kelly's Contentions.—From our viewpoint, if we were to criticize the article by Mr. Kelly it would be on several grounds.

One, that Mr. Kelly gives so much of his effort to pointing out the evils of multiple boards and their varying standards, conditions with which we are all familiar and which we all regret.

Two, Mr. Kelly unduly magnifies the defects in the complexion of basic science boards, the supposedly basic science subjects, and the places such certificates from basic science boards would receive from professional boards like the California Board of Medical Examiners.

Three, Mr. Kelly seems to think that basic science laws in order to be efficient should do away with cults already legalized, and even change the character, make-up and outlook on life of many cultist practitioners. Now a basic science law constitutionally cannot be made to be retroactive in its application if it would deprive a large group of practitioners of vested legal rights which permit them to earn their living by the practice of a certain profession. Again it is not fair to expect a basic science law to make a better or more learned practitioner out of every cultist licentiate any more than it would be fair to expect a law for nonsectarian licentiates to

make a good or more learned man out of every licentiate of the nonsectarian group.

Four, Mr. Kelly seems to think that the real solution of the problem of preventing incompetent persons from receiving licenses as practitioners of the healing art is a responsibility which lies with the nonsectarian practitioners. We are to give money and effort in such ample profusion that a propaganda of such magnitude will be carried on that the lay public everywhere will rise up and give their blessing to the practitioners of nonsectarian medicine; and at the same time refuse to go to cultist practitioners for treatment of any kind. All of which sounds well when it is dressed up in language intended to appeal to emotional or altruistic endeavor, but which from the practical standpoint is analogous to some of the quests which made Don Quixote such a celebrated character.

* * *

What Mr. Kelly Seems to Have Forgotten.—From our viewpoint Mr. Kelly seems to have failed to recognize that under our present form of national and state governments, in regard to the licensure of practitioners of the healing art, that what has been, is; and that some things which are, will in all probability continue to be.

* * *

How Could a Basic Science Law Be of Value to California?—As we see the situation, the major improvement factor which makes a basic science law worthy of consideration by California, as a means of betterment of standards of licensure, does not concern osteopaths, chiropractors or naturopaths who are already legally licensed in California, and who will continue to have legal sanction to practice, no matter what we do or do not do, but with those new cults still in the borning, or today even unthought of, and which cults in good time will come into our midst and demand legal recognition as did their cultist brethren before them.

* * *

The Lesson From a Recent California Cultist Convention.—It may be taken for granted, if conditions of the future obtain as in the past, that such new cults would receive legal sanction. Why not? Who would prevent such recognition? Have our best efforts in the past prevented such legal recognition?

If past performance is a fair standard for judging, each such new cult would in its beginning exploit and make its wares especially attractive to lay persons of minimum education and of small financial resources, but with intense ambitions to take themselves out of the white collar class of vocations. With the passing of time other new "colleges" of each such cult would come into existence to give competition to the originators of the movement, and the "doctors" who had previously graduated would then begin to talk about high and higher standards for their group; until indeed the number of scholastic

working hours—in their catalogues—would appear as great or greater than in the curricula of nonsectarian institutions.

Witness, in this connection, the following excerpt from an item in the *Los Angeles Times* of August 14 last, which item no doubt led many lay readers to think that the cultist group referred to was most alert in working for higher standards. The excerpt reads as follows:*

Dr. Samuel J. Howell of Sacramento last night was elected president of the National Progressive Chiropractors' Association at its convention in the Los Angeles College of Chiropractic. This will be the fourth term as president for Doctor Howell, who is secretary of the California State Board of Chiropractic Examiners. . . . Proposed amendments of the California chiropractic laws was the leading topic at the convention yesterday. The amendments will raise the standard of education required of students and will advance professional requirements in chiropractic schools and colleges by increasing the minimum hours to 3600 upon the passage of the measure, and a further increase to 4000 hours, effective January 1, 1932. Minimum present requirements are 2400 hours. The bill will also introduce electrical and physical therapeutics and additional hours of obstetrics and chemistry as requirements. . . .

In the above excerpt we find an excellent example to which Mr. Kelly can apply his theories. Here we have a state examining board for a cultist group, which has legal sanction through initiative vote of the people of California, the supreme legislative authority of the state. The members of this group in the lay press give notice of their intention to raise their educational requirements. Now what would Mr. Kelly do under these conditions or, being more specific, what would he have the nonsectarian medical profession of California and of other states, do in these premises? If an attempt were made to prevent this cultist group from raising its standards, the nonsectarian profession would bring down upon itself a storm of disapproval from lay citizens, and rightly so. If an attempt were made to divest these practitioners from the right to practice because of lesser standards of education and training, that effort would also fail, and coming at this late day, deservedly so.

* * *

The Real Licensure Problem Is Not With Groups Already Legally Existent.—Let us repeat what has been previously indicated, namely, that in California these cultist groups are legally existing, that the graduates who are now licentiates are constantly striving to raise their standards of preliminary education and training of their groups in much the same manner as in nonsectarian medicine, a half century ago, our own leaders sought to improve our medical school standards. We deal here with an evolutionary process which in a profession like that of the healing art must ever give expression to itself, if the disciples and their beliefs are to be kept from retrogression.

The cultist groups already established are not the crux of the problem. It is the unborn cultist

groups which must be prevented from receiving legal sanction; and for the good and sufficient reason that in this day and generation it is not only an absurdity, but practically a crime to permit persons of deficient preliminary education and of inadequate professional training to receive legal sanction to hold themselves before the public as competent to treat diseases and injuries of human beings.

* * *

A Basic Science Law Would Safeguard the Future of Licensure in California.—For these new cults a basic science law would introduce an element that has not existed in the past. And the strongest element in a basic science law has not to do with the complexion of the basic science examining board, or the nature of the supposedly basic science subjects, but with that provision that demands that each applicant shall present evidence of possessing at least a real four-year high school education.

* * *

Why a Basic High School Education Is of Such Great Importance.—Now why is this four-year high school education so important? The answer is that the first disciples of the first colleges of a new cultist group (which first colleges or institutions are nearly always under the commercialistic influence of their owners and propagandists) are almost always persons of less than a four-year high school education; in fact many may have little more than a reading, writing and arithmetic standard, but with an important additional factor, namely, an intense desire and ambition to be a somebody, as a "doctor," for example.

If these first student disciples did not go to such a new cultist school, and high school graduates are too intelligent and self-respecting to flock in great numbers in the beginning to such a new cult, then the promoters would find their efforts financially unremunerative, and such a cultist group would probably not get a real foothold in the state. On the contrary, let such a new cultist group turn out in short time tens and hundreds of graduates (whether they practice in the beginning with or without legal sanction does not matter), and it will be found that there will be a sufficient number of lay persons who will seek their treatment services. Once that is accomplished, with testimonials from such patients, the group finds little difficulty in fastening itself upon the communities of a commonwealth. In due time the cult is almost sure to receive a certain amount of legal sanction. And once any kind of legal sanction for ever so limited a group of diseases or methods of treatment is given, it is almost impossible to get an American jury that will adequately penalize those graduates who use methods outside their own cult, even though such practice be in contravention of the law.

This picture just presented is the set-up that may be said to have surrounded the advent of the cultist groups which now have legal recognition in California, and some other states. This is what we should have learned from experience. Experience is a teacher worthy of respect.

* The California Board of Medical Examiners column in this and preceding issues contains some interesting items on certain chiropractic colleges which, by comparison with the excerpt here printed, provoke other lines of thought.

A Basic Science Law in California Should Meet With Little Opposition.—If a basic science law were proposed in California it would seem to be a fair assumption that the sectarian schools, which are already legally recognized in California and all of which profess high school (or higher) standards of preliminary education, would have no objection to demanding this same standard for new cultist groups which might later on desire to enter the state.

In relation to nonsectarian medicine the basic science law could be so worded that any professional board could decide for itself to what extent it wished to recognize the basic science certificates. Further, in case a basic science board did not maintain the proper minimum standards, the members of our own California Board of Medical Examiners could so frame their questions that all applicants would be called upon to give answers that would satisfactorily indicate both preliminary and professional education and training.

From all of which it is to be noted that the writer is as firmly convinced as ever of the desirability of a basic science law for California, and believes that all members of the California Medical Association who are interested in medical organization and the protection of medical standards would do well to give considerable study thereto.

FALL TERM OF COUNTY SOCIETIES—SOME QUERIES AND COMMENTS

What Work of the Fall Term Might Comprehend.—The vacation season of 1929 now being of the past, it may be assumed that the county medical societies, which through their union make up the California, Nevada and Utah Medical Associations, have again taken up their work in their respective localities. It may not be out of place at this time in the calendar year for the members of such county societies to take stock, as it were, of some of the matters in which every county unit in organized medicine should be interested. Among such items might be mentioned:

* * *

Scientific Programs.—Are these of such nature to be of general interest to members? Is the arrangement of topics such as to appeal to and be of profit to the members who attend the meetings? Do the papers presented bring to the front the best work and efforts of local colleagues? Does the society receive the stimulation which comes from occasionally inviting colleagues from other cities to make addresses? The secretary of the Association will be glad to give aid in supplying such speakers through the Extension Lecture Service of the California Medical Association.

* * *

Good Fellowship Features of Meetings.—Is the county society alert to the necessity and value of adequate social features at meetings? Was a vacation out-of-door gathering put across during the summer months? If not, will any attempt be made to arrange for one such next summer? Are

informal suppers or lunches made a part of the regular routine meetings? If not, it is possible that such a county society may be missing some of the most valuable of upbuilding organization factors. Doctors of medicine are no different than other human beings. They need occasional relaxation and diversion, and when it is provided, those who participate therein, through better understanding of one another, are able to develop a stronger county medical unit than would be otherwise possible.

* * *

Building Fund for a Home for the County Society.—Every county society might well have a permanent quarters committee. From time to time, in almost every community, conditions exist which make the acquisition of property especially advantageous. If a building fund is in existence, no matter how small, then a permanent quarters committee consisting of members who are active and loyal to organized medicine may at times be in position to accomplish the seemingly impossible. When chapters composed of college lads can build splendid fraternity houses in our colleges and universities, it would seem that medical men of maturity might well be able to solve such problems, to the betterment of their local societies and of organized medicine at large.

* * *

Standing Committees.—Every county society has certain officers and standing and special committees. Are all functioning as they should? How many are figureheads? If figureheads, why is such the case? Is such a deficiency due to improper selection of a chairman or other executives; or is the fault to be found either in lack of interest, or in someone's selfish pride in demanding this, that or the other position for its publicity or salve to the personal ego, with no related sense of duty to fulfill in best possible measure the duties of such office or committee position?

Why would it not be a wise plan for the officers and committeemen of each county society to get together two or more times a year, to sit as a sort of committee of the whole or as a committee on the state of the society, each officer and committee to report on work done or undone to the other officers of the society? Years ago the writer introduced such an innovation into the Los Angeles County Medical Association, and it has continued to be a useful adjunct in maintaining better contacts between the various activities of that society.

* * *

A Local Membership Survey.—No county society can be said to measure up to its greatest possibilities if it does not have a more or less accurate check on all local practitioners of the healing art who hold the degree of doctor of medicine, coupled with information which explains why eligible nonmembers are not working shoulder to shoulder for organized medicine through membership in the county society. In this column, in the August issue, an analysis of mem-

bership figures for the different counties of California was briefly indicated. That article is commended to the consideration of officers of the county societies, since the officers are the members who have special responsibilities in these matters.

* * *

Public Policy and Legislation.—This fall, in California, there will be no civic election turmoil, because the election of state assemblymen and state senators does not come up until the fall of 1930. Nevertheless it would be good political judgment if all county medical societies had one or more members to act as liaison representatives with legislators who will either return to office or later on be up for reelection consideration. The intimacy of such personal contacts may be of great value in the promotion of measures in which organized medicine is naturally interested. Business everywhere maintains such contacts. The public health is of equal importance. The members of the medical profession, through their training and knowledge, have special responsibilities in the conservation of the public health. Alert committees on public policy and legislation can therefore be of much service when they do their work properly.

* * *

The above are a few of the activities which are ever present in county medical societies, and which such organizations, in order to be fully efficient, must not shirk. These items are mentioned here as a sort of score memorandum to make easier a tally by all those who feel they should know somewhat of how these various lines of work are being carried on in their respective county units.

EXAMPLE OF PRESENT-DAY EXPERT MEDICAL TESTIMONY

A Pertinent California Court Case.—As this issue of CALIFORNIA AND WESTERN MEDICINE is being prepared for the press, an automobile accident trial is before one of the courts of Los Angeles, in which testimony of reckless driving and drunkenness, with a charge of murder, are interwoven with testimony and opinions as to the gravity of the shock and injuries received at the time of the accident, and the possible effects which an anesthetic and a hip-joint reduction might have had in the death of one of the victims in the accident.

The prosecution on the one hand and the defense on the other vied with one another in the amount and nature of the testimony submitted by their respective medical experts. In one of the Los Angeles papers of even date with the writing of these comments, it is stated:

The physicians who testified yesterday all based their opinions on the same 1500-word hypothetical question framed by the defense Wednesday and propounded to the defense surgeons; but while all of the defense doctors testified that Rokumoto died from the

anesthetic and not from the automobile injuries, the situation was reversed yesterday.

So now, insofar as the record of the case goes, five doctors have said one thing and five more the exact opposite, with the possibility of a few more to come.

* * *

A Reform Needed in Expert Testimony Procedure.—The above excerpt carries its own suggestive thought to all members of the medical profession who have given any study to medico-legal testimony. It is the presentation of situations such as the one outlined in the above quotation from a daily newspaper, and which, in better or worse form, is an example of what practically appears in newspapers throughout the land that has led leaders of the medical and legal professions to ask a betterment of court procedures in the matter of expert medical testimony. Readers of this journal may recall that in the March 1929 issue, page 165, was printed a paper by Wagner on this subject. An excellent analysis of some of the present-day evils with suggestions for betterment through needed laws, which were presented to the California legislature of 1929, but which unfortunately did not go on to passage, were therein discussed.

* * *

The American Medical Association's Attitude on Expert Medical Testimony.—In last month's issue, page 223, the abstract of the proceedings of the House of Delegates of the recent American Medical Association Portland meeting contained the full resolution on medical expert opinion which was adopted by that body. One paragraph therefrom is here reprinted, because it states in good form the opinion which is held by leaders of the medical profession in the United States on certain phases of this important public health and medico-legal problem.

The paragraph is as follows:

Resolved, That the House of Delegates approves the principle of securing in the case of all capital charges and in the case of as many other criminal charges as the psychiatric facilities of the state will permit an impartial and routine mental examination of the defendant in advance of the trial as a means of obviating the contentious introduction of partisan testimony; and that it approves further the principle of removing as far as possible the question of sanity from the trial itself, reserving the employment of psychiatric data for a post-trial inquiry to determine what treatment is appropriate to the convicted persons. . . ."

It is hoped that the Council and Committee on Public Policy of the California Medical Association will construe this subject to be of sufficient importance to merit study and possible draft of a bill which could be submitted to the California legislature in January 1931. Members of the California Medical Association who are interested in a proper solution of the medico-legal problem are invited to write to the Committee on Public Policy, the membership of which is listed in all issues in the California Medical Association directory.

MEDICINE TODAY

Current comment on medical progress, discussion of selected topics from recent books or periodic literature, by contributing members. Every member of the California Medical Association is invited to submit discussion suitable for publication in this department. No discussion should be over five hundred words in length.

Medicine

Visual Disturbances Caused by Pituitary Tumors.—Visual disturbances may be due to any one of many local or general causes. In any case the danger lies, not so much in overlooking the symptom, as in superficial investigation, or in failure properly to interpret the findings which have been gained perhaps by a painstaking examination. Pituitary tumors, situated just behind the chiasm and between the diverging optic tracts, are notoriously prone to cause disturbances in vision. Such symptoms are produced probably by direct pressure of the growth on the optic pathway. As Cushing has suggested, dislocation of the internal carotid artery may serve to constrict the optic nerve just distal to the chiasm. Late symptoms may be caused by the inclusion within the tumor of the nerves supplying the extraocular muscles.

Patients suffering with pituitary tumors will usually complain of blurring of vision, failing vision, half vision (hemianopsia) or occasionally double vision.

Blurring of vision is a rather indefinite term often used by the patient when the disturbance is momentary or of slight degree. Effort should be made to ascertain just what he means, for there are many common causes which produce it. Frequently due to errors of refraction or muscle imbalance, it is sometimes due to intracranial tumors, including those of the pituitary body. The symptom itself is by no means characteristic of tumors in this situation unless it be associated with other localizing phenomena.

Progressive failure of vision is more important as a manifestation of pituitary new growth, particularly in the young, where the possibility of a congenital cyst should be considered. In these cases it may be ascribed to syphilis, alcohol, tobacco, uremia, or focal infection, especially that of the ethmoid or sphenoid sinuses. A study of the extent of visual field loss will usually make a positive diagnosis possible. In addition, the ophthalmoscope will usually reveal some degree of primary optic atrophy. Choked disk and secondary atrophy are not often seen.

Pressure on the decussating fibers in the optic chiasm or the medial portions of the tract results commonly in a typical bitemporal hemianopsia. Unless a perimetric examination is done, this may be overlooked, for the patient frequently fails to properly interpret the partial loss of vision. If not asked particularly about it, he may not have noticed that the temporal field is darker or more blurred than the nasal, or that it is entirely blind. If observing, he may have noticed that he tends

to run into things on either side or that only objects directly in front of him can be clearly seen.

A common misconception is that the field loss incident to pituitary tumors is always bitemporal. As a matter of fact, this occurs only when the growth of the tumor is symmetrical. Should it extend more to one side, complete blindness of the homolateral eye may result with more or less of a defect in the temporal field of the other. For instance, it is not uncommon to see an outward deviation of the amaurotic eye in advanced cases of acromegaly with retention of vision in the nasal field of the uninvolved side. In such cases examination of the blind eye may reveal light perception in the nasal field to suggest the original type of field defect. It is well to remember that typical bitemporal hemianopsia is but a stage in the process, and should the patient have a perimetric examination at an earlier period, only a segmental defect may be found. Such segmental or even quadrantal loss in the temporal fields are easily overlooked. Rarely a homonymous hemianopsia may be present when the diagnosis of a pituitary tumor might be confused with that of a temporal or occipital lobe new growth.

Double vision is usually a late symptom and is the result of an inclusion of the third, fourth or sixth nerves in the expanding tumor. By this time other characteristic symptoms and signs have occurred which should suggest the diagnosis.

When visual symptoms bring a patient to the office, the only safety lies in a careful and complete study of the case. When the cause is not obvious, such an examination should include a study of the visual acuity, perimetry and inspection of the eye-grounds with an ophthalmoscope. In the clinics where pituitary tumors are studied, it is of interest to note that many of the patients are referred by oculists who have discovered the true nature of the condition in a routine examination of the eye.

CYRIL B. COURVILLE,
Loma Linda.

Dermatology

Overtreatment of Skin Diseases.—If the medical profession generally, and incidentally, the sick public (dermatologically speaking) would realize that overzealous treatment prolongs disease, dermatologists would not have so much to do. The tendency to use strong measures is shared alike by the profession and the laity. A 3 per cent solution may be recommended for a certain condition. The physician, the patient, or both often assume that three times this strength would be that much more effective. The result may be disastrous. We see this illustrated

in the treatment of impetigo. A 10 per cent ointment of ammoniated mercury is often prescribed when a 3 per cent preparation would suffice. The stronger salve may damage the skin, thus favoring spread of the infection. This is particularly true in the case of children or others with delicate skins.

It is a very common experience to have scabies patients come to us suffering from sulphur dermatitis after having gone the rounds of friends, dispensing druggists, and perhaps physicians, all of whom in turn gave the victim a sulphur preparation. There is now available a "one day" ointment treatment of scabies which is most efficacious if properly carried out in every detail. Only too often this is not done. A large pharmaceutical concern is supplying the trade with a good preparation of this salve. Unfortunately the laity can buy it from the drug store. Although printed instructions are given with each jar, laymen and physicians alike often ignore the same and overtreat the disease. The victims and members of their families often finally come to the dermatologist. Relief is had by stopping treatment and prescribing mild, soothing lotions and baths.

Another common condition that is often over-treated by laymen, physicians and even dermatologists, is mycotic infection (ringworm) of the feet and hands. Even under favorable circumstances this trouble may prove to be very stubborn. It is extremely common, probably every third person harboring the infection to a greater or less extent. Last year I examined eight hundred Stanford students, and Templeton of Oakland inspected many more University of California students. From these observations and experiences in private practice and reports from other institutions, it is apparent that at least 30 per cent of the public have ringworm in some form or other. An enterprising drug firm has placed on the market a salve for indiscriminate use in the treatment of this condition. It is based on a well-known and much used formula, utilized by dermatologists for certain types of fungus infections and only for certain phases of the disease. One has to vary his therapy to suit the individual skin and also to meet changing conditions in the same skin. Physicians, pharmacists and laymen often seem to think that an external application that is good for a dermatosis at one time should be equally good for all cases. Maltreatment based on this false assumption is responsible for many complications and failures. It is for this reason that set formulas should not be used blindly and salves sold over the counter often are disappointing. It is not sufficient to merely apply salves, lotions, etc., but all possible underlying bodily disturbances increasing the sensitiveness and vulnerability of the skin always have to be considered. It should be remembered that the practice of modern dermatology is not based on a simple system of external therapy, but is really the practice of medicine by one having special experience and knowledge of the very numerous skin manifestations of disease.

HARRY E. ALDERSON, San Francisco.

Ophthalmology

Corneal Tattooing.—Tattooing of corneal scars is an art to which too little attention is given. Through tattooing, a patient can often be benefited, not only from a cosmetic, but also from a visual standpoint. If the edge of a scar infringes on the pupillary area, one can help the dazzling caused by the irregular reflection and refraction of light made by the scar if one will tattoo it. Up until 1925 Professor Knapp of Basel showed that scars could be tattooed by removing the epithelium and painting the area with gold chlorid solution. Since that time there has been much progress with this type of tattooing. Pischel of San Francisco presented, before the American Medical Association session in 1929, a review of the literature and his own experience with three patients. In his experiments on rabbits he found that the best color was obtained by using gold or platinum chlorid reduced with hydrazin hydrate. His technic in detail for gold chlorid is:

1. The cornea is anesthetized with cocain without epinephrin.

2. The epithelium is thoroughly removed from the area to be stained. Fluorescein may be used to outline the area in order to be sure of its size, but it must be washed off with saline before applying the gold chlorid.

3. An applicator wet with 2 per cent faintly acid gold chlorid is applied to the denuded area for three to five minutes.

4. Epinephrin or fresh 2 per cent hydrazin hydrate is dropped on the treated area, which immediately turns brown or black.

5. Saline irrigation is used and a bandage is applied.

Sodium bicarbonate may be used to neutralize the strongly acid commercial gold chlorid until it is only faintly acid to litmus, but it must never be made neutral or alkaline or it will not stain. Ellett of Memphis and Gifford of Omaha have also published results of tattooing by this method in this country and seem enthusiastic about their results. As this technic is so simple and yields good results in avascular scars of the cornea, there should be more of an effort made among oculists to relieve patients of disfiguring scars of the cornea.

M. F. WEYMANN, Los Angeles.

Dogs Kept Free From Distemper.—London.—Dog-lovers all over the world will be overjoyed to hear that dogs can now be kept from the terrible scourge of distemper, which has in the past been responsible for such heavy losses.

Dr. G. W. Dunkin and Dr. P. P. Laidlaw, working at Mill Hill for the Medical Research Committee in coöperation with the Distemper Research Council, have carried out an investigation of the virus that causes distemper, and after prolonged research have been able to prepare a special vaccine which protects dogs from distemper. Over one thousand animals have now been inoculated with this vaccine, and the results have been strikingly successful.—*Science Service Correspondence.*

STATE MEDICAL ASSOCIATIONS

CALIFORNIA MEDICAL ASSOCIATION

MORTON R. GIBBONS.....President
LYELL C. KINNEY.....President-Elect
EMMA W. POPE.....Secretary

OFFICIAL NOTICE

Notice of Removal.—The California State Medical Association is now located at Four Fifty Sutter Street, Room 2004, San Francisco.

The new offices include a meeting room wherein all executive and council meetings may hereafter be held, two commodious business offices, a work room, and dressing room. The combining of the office of CALIFORNIA AND WESTERN MEDICINE with the state office, and the constantly increasing files of both, rendered the former office inadequate for the present needs of the Association. The new offices were selected with due allowance made for the natural growth and expansion of the state organization.

COMPONENT COUNTY SOCIETIES

ALAMEDA COUNTY

The Alameda County Medical Association held its first meeting after vacation at the new Baby Hospital on Monday, August 19, at 8:15 p. m. Doctor Clifford Sweet presided and invited the members to inspect the hospital at the close of the scientific program. The program consisted of case reports, with exhibitions of cases from the wards of the hospital. The first case shown was a child with a brain tumor presented by Doctor Fletcher and discussed by Doctor Reichert. The tumor is of embryonal cell type and, after partial removal, is being treated with deep x-ray therapy. Doctor Fletcher then presented a case of erythema multiforme, which Doctor Templeton discussed, pointing out that the case was one of those unusual skin conditions in which an original typical textbook type of erythema multiforme changed to a mixed picture in which there are definite evidences of pemphigus. Dr. Hobart Rogers showed films which he had made in the study of congenital heart disease. Dr. Richard Watson reported a case of collapsed lung following surgery. Doctor Templeton discussed the absorption of bismuth compounds. In his experiments the doctor used x-ray in determining the rate of absorption.

On Friday evening, August 23, Dr. Jay Frank Schamberg of Pennsylvania spoke at the Hotel Oakland on the subject, "Recent Advancements in the Treatment of Syphilis." At the close of the lecture Doctor Schamberg answered many questions which were put to him from the audience.

GERTRUDE MOORE, *Secretary.*

✻

CONTRA COSTA COUNTY

The first fall meeting of the Contra Costa Medical Society was held at Martinez on September 10. The president of the society, Dr. L. St. John Hely, called the meeting to order. Dr. L. V. Dragoo of Richmond and Dr. L. R. Knorr of Concord were voted into the society as new members.

A motion was made and carried that the medical society meet with the dental society on October 28,

and Dr. U. S. Abbott of Richmond was appointed as a representative of the medical association to work out a program of mutual interest for both societies in conjunction with the representative of the dental association.

A feature of intense interest to all who attended was a talk given by Dr. C. Sweet, a pediatrician of Oakland, on the subject of "Nutrition of the Child." He very convincingly stressed the hereditary tendency of the child and also brought out the fact that children are living in constant environment of infection from birth. A very comprehensive explanation of the value of vitamins in a child's diet was given, as well as many other interesting and instructive points.

Doctor Sweet was enthusiastically received and attentively listened to.

The following members were present: L. St. John Hely, L. R. Knorr, John Beard, Hall Vestal, U. S. Abbott, H. L. Carpenter, W. A. Rowell, L. V. Dragoo, E. Merithew, John G. Crafts, G. L. Coates, and S. N. Weil. L. R. Jacobus of Oakland and E. W. O'Brien of Richmond were present also.

Contra Costa doctors are looking forward to the completion of two new hospitals, one in Richmond and the other in Martinez.

S. N. WEIL, *Secretary.*

✻

FRESNO COUNTY

The first fall meeting of the Fresno County Medical Society was held at Hotel Californian, September 3, at 8 p. m. Thirty members were present.

Dr. Everett Morris of the new Fresno County Tuberculosis Sanitarium at Auberry spoke regarding the regulations concerning admission of patients to the hospital. He said the financial investigation was carried on by the Fresno County Welfare Department. Regarding the cases admitted, Doctor Morris said the advanced cases could not be handled, only the curable cases. Toxic patients or those running a temperature, or those unable to get up and walk to the dining room are not admitted. The women's dining room is one and one-half city blocks from the sleeping quarters. For this reason cases of bone and joint tuberculosis and pulmonary tuberculosis of children are not admitted. Only cases that are able to be ambulatory cases after not more than two weeks rest in bed are admitted.

Dr. George Sciaroni presented a case of a boy, age sixteen years, who on June 10, 1929, had developed a carbuncle on the neck. This was incised. Six days later he complained of severe pain in the right hip and leg. He received no relief from strapping. Within a day his temperature had risen to 106 degrees. The abdomen was distended, symptoms of meningitis were present. A spinal puncture was done and 50 cubic centimeters of thick yellowish pus were withdrawn. Bacteriological examination showed *Staphylococcus aureus* in pure culture. By June 26, since the patient was getting worse, a needle was left in the spinal canal, but there was little or no drainage. On June 27, under ethylene anesthesia, a laminectomy was done in the dorsal region and a rubber drainage tube left in. Following the operation the temperature was 99 to 103 degrees for several days, and there was a gradual improvement in the symptoms. The muscles in the arms and legs, however, showed considerable atrophy. The patient is now well and able to be out. In look-

ing through literature the only similar case that could be found was one described by Emerson in the *Boston Medical and Surgery Journal*, March 24, 1927.

Dr. J. H. Pettis showed a postoperative case of carcinoma of the rectum. The patient was a woman of fifty-two years of age. She complained of loss of weight and passing of bloody stools. Four years ago she began to have pruritus, which was said to be due to hemorrhoids. One year ago she developed constipation, two and one-half months ago bloody and watery stools, as many as fifteen or twenty a day. During the past year or two she has lost twenty pounds. A cecostomy was performed by Doctor Pettis on May 27, 1929. On June 18, under spinal anesthesia, a Coffey operation, as modified by Dudley Smith, was done. On June 27, under caudal and sacral anesthesia, the removal of the lower bowel was done. The patient is apparently enjoying good health now and seems to suffer no discomfort from the colostomy.

JOHN M. FRAWLEY, *Secretary*.



MENDOCINO COUNTY

The Mendocino County Medical Society met at Willits, September 3, at 8:15 p. m., after inspection of the Howard Memorial Hospital at the invitation of Doctor Babcock. Those present were Doctors Bowman, Babcock, Sisson, Van Allen, Scudder and Wolfe, and Dr. Cleland as guest.

The first business was election of officers and on motion of Doctor Van Allen, duly seconded, the president and secretary-treasurer were reelected for the ensuing year.

Dr. Royal Scudder was chosen delegate and Dr. L. K. Allen as alternate to the annual meeting of the State Medical Association at Del Monte, April 28, 1930.

The report of the treasurer was to the effect that a balance of \$86.64 was on hand.

Dr. Herschel Cleland was nominated a member, beginning January 1, 1930.

The evening was spent in discussion of topics of interest of a local nature, principally the subject of care of indigent county patients, as well as non-indigent tuberculous patients, and how to stimulate interest in medical care of the indigent among the people at large.

The meeting adjourned at 11 p. m. after designating its next meeting place as Talmage in the early part of November 1929.

PAUL J. BOWMAN, *Secretary*.



SAN DIEGO COUNTY

The Scripps Metabolic Clinic has recently completed a new physiological and chemical laboratory devoted to metabolic research. This laboratory is now under the supervision of Dr. E. M. MacKay, who has recently been added to the staff of the clinic. Doctor MacKay was formerly on the staff of Stanford University. His work will be devoted primarily to the study of renal disease. The laboratory has been erected at an initial cost of \$50,000. One of the features of the building is the medical library containing bound volumes of the current literature on metabolic work.

Doctors Burger, Rees, and Weinberger of the county society have returned from Honolulu, T. H., where they attended the sessions of the Pan-Pacific Surgical Congress, which body decided to meet again three years hence at this lovely "Crossroads of the Pacific." Our representatives speak in the highest praise of the generous entertainment and gracious hospitality accorded them on the Islands. This "hands across the sea" getting together on the part of the representatives of different nations, but of a common profession, is another link in the chain which is slowly binding this old world together in unity and peace.

The county society resumes its scientific sessions after its summer recess Tuesday, September 10, with a dinner meeting at the San Diego Athletic Club, followed by a talk on "Heart Disease" by Edwin Schisler, M. D., of St. Louis, Missouri.

ROBERT POLLOCK.



SANTA BARBARA COUNTY

The regular meeting of the Santa Barbara County Medical Society was held at the St. Francis Hospital, Monday evening, September 9, with Doctor Brush in the chair. The minutes of the previous meeting were read and approved.

The scientific program was opened by Dr. Howard Eder, who gave a report of three infant cases: the first, empyema; second, vomiting, with a diagnosis of pyloric stenosis; and third, rickets in a three months' child.

Each of these case reports was followed by the roentgen findings and was discussed by Doctors Ullmann, Sansum, and Brown.

The next paper was on "Thornwald's Disease," by Dr. Henry Profant. The paper consisted of a very brief abstract from a German translation and dealt with the history, anatomy, and pathology of the disease.

The society then went into executive session, and Doctor Brush read all of his correspondence with Supervisor Preisker regarding the appointing of a committee for the investigation of conditions in the Santa Maria Hospital. Discussions by Doctors Jones, Brown, Mellinger, Ullmann, Means, Ryan, Sink, and Baird followed, and it was then moved, seconded and carried, that a copy of the records of the meeting of September 2, held in Santa Maria, be obtained.

No further action was taken in the matter and the meeting adjourned.

WILLIAM H. EATON, *Secretary*.

CHANGES IN MEMBERSHIP

New Members

Alameda County—Joseph L. Eaton, A. L. Gleason, Charles F. Greenwood, D. E. Jeffrey, Malvina E. Moore, Leo P. Musser, Calvert Stein.

Contra Costa County—S. V. Dragoo, L. R. Knorr.

Kern County—Samuel C. Glassman.

Lassen-Plumas County—William H. Lawler.

Los Angeles County

Harry E. Anderson
Ethel M. Brownsberger
Adrian E. Clark
G. D. Conover
Claude L. Davison
Howard D. Eaton
Belle C. Eskridge
Dorothy M. Franklin
J. M. Furstman
H. C. Gernand
Jacques S. Gilbert
Bernard J. Hanley
Lucile G. Hartwig
L. D. Huffman
C. M. Hyland
Voyle James
F. O. Kolda

C. A. Lindquist
J. L. Linn
Ralph W. McKelvy
Jacob Mishkin
Bernard J. Mundall
Edwin B. Plimpton
Robert H. Rathbone
M. A. Schurter
Cyril W. Shier
H. Vern Soper
Roy E. St. Clair
Aubon Earl Stewart
Richard T. Taylor
Hans von Briesen
W. Earl Wallace
A. W. Warnock
Thomas B. Williams

Shirley D. Wimmer

Merced County—LeRoy Hillyer, Thomas Ruffin Pratt.

Orange County—Lyndon E. Taylor.

San Diego County—William V. Horton, Rutherford B. Irones, Hiram D. Newton, Roscoe A. Paull.

San Francisco County—Alexander G. Bartlett, Crawford Bost, Loris E. Curtis, Donald A. Dallas, Francis Paul O'Hara, Bernard J. Rohlfes, Archie D. Sinclair, Leon Mitchell Wilbor.

Ventura County—Robert P. Little.

Transferred Members

James P. Warren, from Lassen-Plumas to San Francisco County.

Numa P. Dunne, from Lassen-Plumas to Alameda County.

Harold A. Morse, from Siskiyou to Alameda County.

Curtis Lane Falk, from San Francisco to Humboldt County.

Paul R. Noetling, from San Joaquin to Tuolumne County.

Deaths

Blair, James C. Died at San Jose, August 28, 1929, age 49 years. Graduate of University of California Medical School, San Francisco, 1905. Licensed in California, 1905. Doctor Blair was a member of the Santa Clara County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Hagen, John Charles Edward. Died at Alhambra, August 10, 1929, age 46 years. Graduate of Bennett Medical College, Chicago, 1906. Licensed in California, 1923. Doctor Hagen was a member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

Jackson, Paul Kingsley. Died at San Luis Obispo, July 12, 1929, age 41 years. Graduate of Cooper Medical College, San Francisco, 1901. Licensed in California, 1901. Doctor Jackson was a member of the San Luis Obispo County Medical Society, the California Medical Association, and the American Medical Association.

Tebbe, William Edward. Died at Susanville, August 17, 1929, age 51 years. Graduate of Cooper Medical College, San Francisco, 1899. Licensed in California, 1899. Doctor Tebbe was a member of the Siskiyou County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

EXTENSION LECTURE PROGRAM***SUBJECT INDEX****Dermatology and Syphilology**

Alderson, Harry E. Templeton, H. J.
Soiland, Albert Way Stuart C.

Eye, Ear, Nose, and Throat

Barkan, Hans

General Medicine

Duncan, Rex Pulford, D. Schuyler
Hollingsworth, M. W. Read, J. Marion
Hurwitz, Samuel H. Rowe, Albert H.
Kellogg, W. H. Shepardson, H. Clare
Lisser, Hans Wolfsohn, Julian M.

(a) Cardiology

Kilgore, Eugene S. Langley, Robert W.
Spiro, Harry

(b) History of Medicine

Codellas, Pan S.

(c) Tropical Medicine

Reed, Alfred C

(d) Tuberculosis

Pierson, Philip H. Rothschild, Max
Voorsanger, William C.

General Surgery

Bell, Leo P. Gilcreest, Edgar L.
Brooks, LeRoy Kilfoy, E. J.
Buerger, Leo Mentzer, Stanley H.
Duncan, Rex Nagel, Gunther W.
Gehrels, Ernst Soiland, Albert
Yoell, Rodney A.

(a) Brain and Spinal Cord Surgery

Towne, E. B.

(b) Plastic Surgery

Bames, H. O.

Gynecology and Obstetrics

Emge, L. A. Soiland, Albert

Orthopedics

Gottlieb, A.

Radiology

Lawson, John D.

Urology

Cross, W. W. Kreutzmann, Henry A. R.
Ferrier, Paul A. Redewill, Francis S.
Jacobs, Louis Clive Stevens, William E.
Kilfoy, E. J. Wesson, Miley B.

EXTENSION SPEAKERS

Harry E. Alderson, M. D., and Stuart C. Way, M. D., 320 Medico-Dental Building, 490 Post Street, San Francisco.

1. The Determination of Malignancy in Tumors of the Skin. (Lantern slides.)
2. Dermatoses Commonly Seen in General Practice. (Lantern slides.)
3. A Skin and Syphilis Clinic will Be Held of Locally Selected Cases (five or six).

H. O. Bames, M. D., 512 Pacific National Building, Los Angeles.

1. Esthetic Plastic Surgery of the Face. (Lantern slides.)
2. Esthetic Plastic Surgery of the Breast. (Lantern slides.)

Hans Barkan, M. D., 921 Medico-Dental Building, 490 Post Street, San Francisco.

1. Headaches Due to Ocular Causes.
2. Industrial Aspects of Eye Injuries.
3. Modern Methods of Cataract Operations.

Leo P. Bell, M. D., Woodland Clinic, Woodland.

1. Carcinoma of the Large Bowel.
2. Surgical Diseases of the Spleen.
3. Surgical Diseases of the Stomach and Duodenum.

Leroy Brooks, M. D., 731 Medico-Dental Building, 490 Post Street, San Francisco.

1. Ptosis of the Cecum and Ascending Colon, a Congenital Deformity Often Misdiagnosed as Chronic Appendicitis.
2. Practical Preoperative Preparation and Post-operative Treatment in the Light of Recent Advances in Biochemistry.
3. Blood Transfusions—Any Phase of the Subject.

Leo Buerger, M. D., Los Angeles.

(Available after January 1, 1930.)

1. Circulatory Disease of the Extremities.
2. Tuberculosis of the Kidney—Pathology and Diagnosis.
3. Treatment—Surgical and Instrumental of Uretero-renal Calculus.

Pan S. Codellas, M. D., Schroth Building, 240 Stockton Street, San Francisco.

1. Ancient Hindu Medicine.
2. Ancient and Modern Incubation. (Lantern slides and probably a reel of Church Sleep at Tenos, Greece.)
3. Donaria, Past and Present. (Lantern slides.)

W. W. Cross, M. D., 1624 Franklin Street, Oakland.

1. Bacterial Nephritis. (Lantern slides.)

Rex Duncan, M. D., 204 Professional Building, 1052 West Sixth Street, Los Angeles.

1. The Present-Day Treatment of Cancer.
2. Uterine Cancer and Its Treatment.
3. Treatment of Lip Cancer.

* Members of the California Medical Association who wish to coöperate in this lecture work are invited to write to the chairman of the Extension Lecture Committee, Dr. Robert Legge, Univ. of Calif. Infirmary, or to the secretary of the California Association.

L. A. Emge, M.D., 2000 Van Ness Avenue, San Francisco.

1. Legal Sterilization.
2. Irradiation Treatments in Gynecology.
3. Diagnosis and Treatment of Sterile Women.

Paul A. Ferrier, M.D., Professional Building, 65 North Madison Avenue, Pasadena.

1. Tumors of the Urinary Tract.
2. Tuberculosis of the Urinary Tract.
3. Points of Contact Between Urology and General Practice.

Ernst Gehrels, M.D., 734 Medico-Dental Building, 490 Post Street, San Francisco.

1. The Surgical Management of Gastric and Duodenal Ulcer.
2. The Choice of Procedure in Resection of the Large Intestine.
3. Cancer of the Rectum.

Edgar L. Gilcreest, M.D., 315 Fitzhugh Building, 384 Post Street, San Francisco.

1. Surgical Treatment of Aneurysm.
2. Scientific versus Cult Treatment.
3. Traction in Treatment of Fractures.

A. Gottlieb, M.D., 1240 Roosevelt Building, 727 West Seventh Street, Los Angeles.

1. Orthopedic and Physical Therapy in Early Poliomyelitis.
2. Obscure Foot Lesions. (Lantern slides.)
3. Natural Heliotherapy in Joint Tuberculosis.

Merrill W. Hollingsworth, M.D., 409 First National Bank Building, Santa Ana.

1. An Historical Sketch of Syphilis.
2. Office Management of the Syphilitic Patient.

Samuel H. Hurwitz, M.D., 1214 Medico-Dental Building, 490 Post Street, San Francisco.

1. What the General Practitioner Should Know About Asthma.
2. The Nose and Throat Aspects of Asthma and Hay Fever.
3. Focal Infection in Asthma.

Louis Clive Jacobs, M.D., 450 Sutter Street, San Francisco.

1. The Surgical Prostate.
2. Tuberculosis of the Kidney.
3. Lesions in the Posterior Urethra.

W. H. Kellogg, M.D., State Hygienic Laboratory, Berkeley.

1. Concerning Anaphylaxis.
2. Diphtheria Is Preventable but Not Prevented. Why?
3. The "Plague" Diseases in Modern Times.

E. J. Kilfoy, M.D., 709 Medical Office Building, 1136 West Sixth Street, Los Angeles.

1. Diagnosis and Treatment of Teratoma of the Testicle.
2. Carcinoma of the Liver in Childhood.
3. Malignant Adenoma of the Colon and Treatment.

Eugene S. Kilgore, M.D., 724 Medico-Dental Building, 490 Post Street, San Francisco.

1. Clinical Significance of Precordial Pain.
2. The Practical Assessment of Cardiac Condition.

Henry A. R. Kreutzmann, M.D., 2000 Van Ness Avenue, San Francisco.

1. The Causes and Treatment of Residual Urine in the Bladder. (Illustrated.)
2. Diagnosis and Treatment of Cancer of the Prostate. (Illustrated.)
3. The Etiology and Treatment of Hematuria. (Illustrated.)

Robert William Langley, M.D., 312 Professional Building, 1052 West Sixth Street, Los Angeles.

1. Coronary Artery Disease. (Lantern slides.)
2. Cardiac Pain.
3. X-Ray Study of the Heart.

John D. Lawson, M.D., Woodland Clinic, Woodland.

1. Cholecystography and Its Diagnostic Value.
2. Radiographic Evidence of Sinus Disease.
3. Roentgen Therapy in Leukemia.

Hans Lisser, M.D., 240 Fitzhugh Building, 384 Post Street, San Francisco.

1. Recent Endocrinology. (Lantern slides.)
2. The Pituitary Disease, Acromegaly, and Its Effect on Other Ductless Glands. (Lantern slides.)
3. Goiter and Myxedema. (Lantern slides.)

Stanley H. Mentzer, M.D., 450 Sutter Street, San Francisco.

1. Treatment of Acute Cholecystitis.
2. Indications for Cholecystectomy.
3. Etiology of Cholesterosis of Gall Bladder.

Gunther W. Nagel, M.D., 2000 Van Ness Avenue, San Francisco.

1. Excision of Duodenal and Gastric Ulcer.
2. Duodenitis.
3. The Diagnosis and Treatment of Esophageal Lesions Causing Dysphagia.

Philip H. Pierson, M.D., 811 Medico-Dental Building, 490 Post Street, San Francisco.

1. The Present Status of the Treatment of Pulmonary Tuberculosis Including the Indications for Surgery.
2. The Use of Tuberculin in the Diagnosis and Treatment of Extrapulmonary, as well as Pulmonary Tuberculosis.
3. Pulmonary Abscess and Bronchiectasis. Remarks on Its Etiology, Diagnosis and Treatment.

D. Schuyler Pulford, M.D., Woodland Clinic, Woodland.

1. The Ketogenic Diet Treatment of Epilepsy.
2. Diseases of the Thyroid.
3. Fresh Tissue Pathology and the Grading of Neoplasms.

J. Marion Read, M.D., 1530 Medico-Dental Building, 490 Post Street, San Francisco.

1. Some Physiologic Aspects of Blood Pressure.
2. A Summary of Our Present Knowledge of Thyroid Disease.

Francis H. Redewill, M.D., 686 Flood Building, 870 Market Street, San Francisco.

1. Chancroids—Treatment of Two Thousand Cases. (Lantern slides.)
2. The Colon as Site of Focal Infection in Chronic Genito-Urinary Diseases. (Lantern slides.)
3. New Technique of Perineal Prostatectomy. (Lantern slides.)

Alfred C. Reed, M.D., 715 Fitzhugh Building, 384 Post Street, San Francisco.

1. Cairo, Baghdad, and the Orient Medically. (Ninety minutes—110 lantern slides.)
2. Dysentery—For the Practitioner.
3. Work of the Pacific Institute of Tropical Medicine of the University of California.

Max Rothschild, M.D., 704 Fitzhugh Building, 384 Post Street, San Francisco.

1. The Early Diagnosis of Pulmonary Tuberculosis.
2. The Diagnosis and Treatment of Tuberculosis of Bronchial Glands in Children. (Lantern slides.)
3. The Treatment of Tuberculosis with Specific and Nonspecific Remedies. (Lantern slides.)

Albert H. Rowe, M. D., 242 Moss Avenue, Oakland.

1. Food Allergy.
2. Treatment of Bronchial Asthma.
3. Diabetes Mellitus—Its Diagnosis and Control.

H. Clare Shepardson, M. D., 204 Fitzhugh Building, 384 Post Street, San Francisco.

1. Treatment of Diabetic Coma. (Lantern slides.)
2. Diabetic Surgery from a Medical Viewpoint.
3. Arteriosclerosis in the Young Diabetic.

Albert Soiland, M. D., 1407 South Hope Street, Los Angeles.

1. Observations of Uterine Cancer Treated by Radiation and Results During the Past Fifteen Years.
2. Radium and Roentgen Therapy of Uterine Fibromyomata.
3. Electrocoagulation and Radiation in the Treatment of Skin Malignancies.

Harry Spiro, M. D., 501 Flood Building, 870 Market Street, San Francisco.

1. Consideration of Heart Action in Health and Disease. (Moving pictures of the living animal heart.)
2. Angina Pectoris—Treatment and Diagnosis.
3. Various Cardiac Irregularities—Diagnosis and Treatment.

William E. Stevens, M. D., 602 Flood Building, 870 Market Street, San Francisco.

1. Urology in Women.
2. Diseases of the Urinary Tract During Infancy and Childhood.
3. Urinary Calculi.

H. J. Templeton, M. D., 3115 Webster Street, Oakland.

1. Cutaneous Malignancies—Their Treatment, Especially by Electrothermic Methods. (Lantern slides and demonstrations of modalities used.)
2. Syphilis—Modern Advances in Its Diagnosis and Treatment.
3. Cutaneous Manifestations of Syphilis. (Lantern slides.)

E. B. Towne, M. D., 612 Union Square Building, 350 Post Street, San Francisco.

1. Roentgen Ray in Diagnosis and Localization of Tumors of the Brain. (Lantern slides.)
2. Treatment of Injuries of the Brain and Spinal Cord. (Lantern slides.)
3. Surgery of the Peripheral and Cranial Nerves. (Lantern slides.)

William C. Voorsanger, M. D., 1001 Medico-Dental Building, 490 Post Street, San Francisco.

1. Results of Vaccine Therapy in Treatment of Infectious Bronchitis and Asthma.
2. Modern Treatment of Pulmonary Tuberculosis.
3. Pulmonary Conditions Wrongly Diagnosed as Tuberculosis.

Miley B. Wesson, M. D., 939 Medico-Dental Building, 490 Post Street, San Francisco.

1. Diseases of the Testicle—Differential Diagnosis and Treatment. (Lantern slides.)
2. Confusing Pyelograms. (Lantern slides.)
3. Diseases of the Prostate—Differential Diagnosis and Treatment. (Lantern slides.)

Julian M. Wolfsohn, M. D., 1401 Medico-Dental Building, 490 Post Street, San Francisco.

1. The Pathology and Treatment of Nervous Syphilis.

2. Modern Methods of Diagnosis and Localization of Brain and Spinal Cord Tumors. (Lantern slides.)

3. Epilepsy and Attacks that Simulate Epilepsy.

Rodney A. Yoell, M. D., 317 Physicians Building, 516 Sutter Street, San Francisco.

1. The Newer Physiology of the Biliary Tract in Relation to Surgery. (Lantern slides.)
2. Clinical Concepts of Bile Salt Retention. (Lantern slides.)
3. Technical Procedures in Surgery of Acute Abdomen.

NEVADA STATE MEDICAL ASSOCIATION

R. R. CRAIG.....	President
W. A. SHAW.....	President-Elect
H. A. PARADIS.....	First Vice-President
R. P. ROANTREE.....	Second Vice-President
HORACE J. BROWN.....	Secretary-Treasurer
R. P. ROANTREE, D. A. TURNER, S. K. MORRISON.....	Trustees

OFFICIAL NOTICE

The Washoe County Medical Society was honored in having the privilege of entertaining on August 23 and 24, in Reno, the Pacific Association of Railway Surgeons on the event of their twenty-seventh annual meeting. The scientific program was held in the mornings, the afternoons being devoted to sightseeing. Trips were arranged for visitors to see Lake Pyramid, Nevada's historic lake, discovered by Kit Carson and General Fremont in 1844. The famous Comstock Lode at Virginia City, which in its day produced over \$700,000,000 in gold and silver, was visited. Lake Tahoe, 6225 feet high, up in the beautiful Sierras, was the scene of Sunday's visit and barbecue. It is a matter of pleasure to inform our California and other friends that about two-fifths of Lake Tahoe lies in Nevada territory.

The luncheons for the men were held at the Twentieth Century Club, while those for the ladies were held at the beautiful Riverside Hotel and the Mayberry Dude Ranch.

On Friday night an informal banquet for all was held at the Twentieth Century Club. About 160 were present. The Hon. Leslie Summerfield, Washoe County District Attorney, was toastmaster, with Dr. J. LaRue Robinson, president of the Washoe County Medical Society, presiding. At the banquet Dr. J. C. Booth of Lebanon, Oregon, gave a very graphic and eloquent oration on the "Passing of the Old-Time Doctor." Ex-Governor James G. Scrugham gave a most interesting historical résumé of the Lost City of southern Nevada, where the ancient Indian civilization of the Southwest had its origin and dwelt up to such time as climatic changes transformed a habitable country into a desert and compelled the abandonment of the ancient pueblos.

The great social fête was held at the historic Bowers' mansion, twenty miles south of Reno, on Saturday evening. It was a ceremonial wind-up under the efficient barbecue supervision of Captain Gosse of Reno. Captain Gosse learned his art during his ten-year service in the early missionary days of the Fiji Islands while functioning as head barbecuer for King Bobo. If general good feeling and abandonment of professional care were indicators of a good time, then this barbecue was one such event. Good things for the stomach, good fellowship and the soft silvery lure of the August moon. Who wouldn't be happy? The Uplifters Club sang, and a new organization of the "Sons and Daughters of the Oppressed Who Will Arise" was present in force.



A. J. HOOD, M. D.
President Pacific Association of Railway Surgeons
1929-1930

The scientific program was sufficiently varied to be interesting. Many interesting points, medical and surgical, were brought out. The program is given below.

The Washoe County Medical Society and the visiting surgeons were under obligation to the fine courtesy of the local Lodge 597 of the "Best People On Earth," who gave their big tepee unreservedly for the use of the Big Medicine Men of the Iron Horse.

Especial mention must be given to some of the wives of members of the local profession who bore special responsibilities during the session. Among such were Mesdames S. K. Morrison, J. L. Robinson, George L. Servoss, W. E. Samuels, and Hood, Sr. Also the splendid assistance in procuring transportation rendered by Messrs. Walker and David of the Reno Chamber of Commerce.

The large number of doctors who attended—many with their families—and the good will expressed as to the pleasant and happy time had with the native Washoes, will last for many days to come.

Dr. A. J. Hood of Reno, Nevada's oldest practicing physician, here since 1886, and an Ann Arbor graduate, was elected president for the ensuing year. Dr. Giles S. Hall of Los Angeles was elected vice-president and Dr. W. T. Cummins of San Francisco was re-elected secretary. San Diego was chosen for the 1930 annual session.

Come again, Railway Surgeons!

Oh take me back to Reno,
Where the sky is always blue,
Where mountain, vale and river
Always seem to welcome you.

* * *

The complete program of the session was as follows:

FRIDAY, AUGUST 23, 9 A. M.

Address of Welcome, Hon. E. E. Roberts, Mayor.
Treatment of Varicose Ulcers and Varicose Veins,
Dr. Curtis E. Smith, San Francisco.

The Medical Management of the Ordinary Case of
Pulmonary Tuberculosis, Dr. Robert A. Peers, Colfax.

The Relationship of Chronic Sinus Infection to
Chronic Bronchitis and Bronchial Asthma, Dr. O. J.
LaBarge, Salt Lake City.

Common Clinical Types of Sacro-Iliac Strain, Dr.
H. C. Pitkin, San Francisco.

Demonstration: New Process of Magnetism for
Extraction of Foreign Bodies from Eye, Dr. J. L.
Robinson, Reno.

SATURDAY, AUGUST 24, 9 A. M.

Presidential Address, Dr. Philip Stephens, Los
Angeles.

Case Report of Splenectomy, Dr. E. F. Root, Salt
Lake City.

The Medical Treatment of Peptic Ulcer, Dr. Philip
King Brown, San Francisco.

Perforated Peptic Ulcer, Dr. W. W. Washburn,
San Francisco.

Absorption of Glucose per Rectum, Dr. J. J. Press-
man, Los Angeles.

Carcinoma of the Rectum, Dr. Dudley Smith, Oak-
land.

Demonstration: New Transfusion Apparatus, Dr.
P. F. McMurdo, San Francisco.

COMPONENT COUNTY SOCIETIES

WASHOE COUNTY

The Washoe County Medical Society met at the
Nevada State Hospital on Tuesday evening, Sep-
tember 10, at the invitation of the superintendent,
Dr. George R. Smith.

In the absence of Dr. J. L. Robinson, Dr. M. A.
Robinson was made presiding officer.

The minutes of the last meeting, including a report
of the twenty-seventh annual meeting of the Pacific
Association of Railway Surgeons at Reno, August 23
and 24, as guests of this society, were read and
adopted.

The evening's program was given to the eye, ear,
nose, and throat men to discuss special lines of in-
terest pertaining to the needs of the general prac-
titioner.

Dr. John H. Fuller, opened with the subject, "What
the General Practitioner Should Know About the
Mouth." Doctor Fuller dealt with this apparently
limited subject in a most practical manner. Among
some of the points brought out was that when a
patient presented himself to the physician for an ex-
amination involving inspection of the mouth, the
medical man should observe the architecture of the
mouth, such as the palatal arch, the teeth, whether
caries were present, or whether, in a child's case, the
teeth should be corrected to normal curve by having
the child visit a dentist, the condition of the tongue
for fissures or sores or lumps. If lumps were found
far back on the tongue, and the patient of middle age
or past, a suspicion of cancer should be in the mind
of the physician and the case should be kept under
treatment and observation. The color of the fauces
should be observed; likewise, the physician should
observe that a red, streaky pharynx was not always
a case of infected tonsils. Vincent's angina, so com-
mon today, especially in people with carious teeth,
but practically absent where there are no teeth, and
lucetic sore mouth should be differentiated when seen,
as such differentiation is easily made in the labora-
tory. Abscesses, whether tonsillar or retropharyngeal,
should receive intelligent care. Doctor Fuller stated
that the anterior cervical glands would sometimes
swell as a result of lymphatic current flow, and if
such were to be surgically treated, it would be wise
to wait until localization had taken place, because the
patient might be seriously averse to having a second
operation done if the first did not bring pus.

With reference to tonsillectomy, if acutely inflamed,
it would be far safer to wait until leukocytosis had
quieted down, which would greatly help in relieving
the patient from possible future surgical or systemic

trouble. Tonsillectomy was not an operation to be lightly undertaken, in view of possible bleeding and of meeting an adventitiously placed blood vessel.

Lastly the essayist spoke of aphonia. This trouble occurring in people past middle age, carcinoma should be considered. Those in middle age, syphilis or tuberculosis should be kept in mind as possible causes.

Dr. Earle Creveling followed with a brief paper on the use of the ophthalmoscope. This useful adjunct to the physician's armamentarium was invented in 1861 by Doctor Helmoltz. By an intelligent use of this instrument the physician can materially aid in arriving at the status *prasens* of the case under treatment. Arterial hypertension will show in the dilated vessels of the retina, their distortion and exudations (if present), also swollen disk. Especially valuable in types of albuminuria, and strikingly so in the advanced types, where the patient complains of loss of sight with the usual symptom complex shown in the case. The swollen optic disk, the cottony-looking exudates about the macula, the fine striated hemorrhages, all combined, will aid the physician materially in giving a prognosis, as the life term in this type of albuminuria is limited. Likewise, in the mellitus diabetic, the findings are a most valuable aid toward a better survey of the case and help in the estimation of cataract difficulties likely to arise.

Lastly, Doctor Creveling called attention to the better diagnosis showing greater frequency of glaucoma in patients today. Contrary to the general medical opinion, this disease is not always of the fulminating character, as supposed by some, but it may insidiously advance through a period of months or years by gradual increase of symptoms that should indicate to the nonspecialist physician that the eyeball is gradually hardening, and if permitted to continue without proper attention the unfortunate patient will eventually merge into that world where darkness ever reigns.

There were many other points of interest developed by the essayist and those who assisted in discussion. Enough so that, in consideration of the need of a better education, the general practitioner who heard both papers and discussions would be inclined to think that his little trodden path of one-way medicine could better be turned into a broader one and he should become a general specialist.

The concluding paper, by Dr. F. W. Dersheimer of Cleveland on the "Neuropsychiatric Management of Patients," was interesting, as it brought out the doctor's own viewpoint in handling that class of patients. The various theories dealing with the neurotic patients were discussed and compared. In closing, the essayist called attention to the fact that leading colleges were now including this study as a coordinate in the major lines of medicine and surgery.

Following the scientific meeting, the society was called from labor to refreshment at the private home of Dr. and Mrs. Smith, where an excellent menu was served to the doctors present. In addition there was a rare treat given by a high-class orchestra playing during the evening.

The social side was greatly enjoyed, which was quite evident by the way the doctors lingered at the table. A rising vote of thanks was given host and hostess and, after many a kind word, the society adjourned.

THOMAS W. BATH, *Secretary*.

NEVADA NEWS

It is a pleasure to announce that construction on the new Saint Mary's Hospital for Reno has been started.

The informal ground-breaking ceremonies were held on the site of the new hospital at 7 p. m., Thursday, August 15. There were a large number of the distinguished Sisters of the Dominican Order present. There was also a large representation of the local clergy, together with practically the entire staff of the hospital, and nurses. Also a generous gathering of interested friends of the institution.

Introductory remarks outlining hospitalization from the days of the Crusades to the present, and stressing the progressive spirit of the Dominican Order, were dwelt on by Dr. Thomas W. Bath, secretary of the Washoe County Medical Society. Dr. Horace J. Brown, ex-chief of the staff, followed with an appropriate speech, and in turn presented the shovel to Dr. S. K. Morrison, present chief of the staff, and the pick to the Rev. Father Moran, who formally broke the ground for the new hospital.

The ceremony took place under auspicious conditions. The mellow August sun was just setting over the crests of the majestic Sierras, and the Carson Valley was flooded in golden and purple light.

The new hospital will have seventy-five rooms and will cost about \$200,000. It will embrace every scientific detail for the care and comfort of its patients as well as for efficient service by its working staff.

We bespeak for the new hospital a large field of real usefulness. In view of the great development of Nevada, such as the Hawthorne ammunition depot, built for naval use under United States supervision, the work on the Boulder Canyon dam, and the development of the mountain areas in the Sierras adjoining Reno, the new Saint Mary's Hospital has a bright future before it.

Usefulness of a "Precedent Book."—In many modern hospitals it has been found useful to keep a record, a so-called "Precedent Book," of established practice in the use of new methods of treatment which makes available the details of such treatment for use by the members of the staff, their assistants, and house officers. Such a precedent book has become almost an essential in recent years owing to the rapidity with which advances are made and new methods become available in medical treatment. It has several advantages.

The technical details of newer procedures are often difficult to carry in mind, and yet accuracy and exactness are essential to success in using them. The "Precedent Book" gives such details in the form accepted by the staff through a committee appointed to pass upon and recommend such procedures for adoption. The special experience of some members of the staff may be called upon in formulating the recommended treatment for certain conditions, and so by a coöperative arrangement the hospital as a whole profits. The attempt to put into written form a description of a therapeutic procedure encourages simplification, criticism, and efforts to improve methods altogether in keeping with the principles of efficiency and economy expressed by President Hoover. Furthermore, additional security is afforded both to the physician individually responsible for the patient, and to the hospital, when it is possible to carry out treatment by methods which have been so thoroughly tested, although new, as to be accepted by the staff as a whole.

Today the dietary treatment of certain common diseases lends itself most strikingly to such a treatment. Rapid progress has been made, and yet few physicians have the time to devote to a special and intensive study of this subject. In diabetes, the dietary treatment has been simplified by the adoption in certain diabetic clinics of a few standard diets. Emergencies arise in the course of diabetic treatment, notably acidosis, or surgical conditions, which require very specialized management. An outline for the treatment of such conditions might well be included in the "Precedent Book." Precautions to be observed in the giving of subpectoral infusions or of intravenous treatment, an outline of treatment for duodenal ulcer, the treatment for such an emergency as mercury bichlorid poisoning, the procedure to be followed by the house officer in various emergencies, and many other subjects would be suitable for consideration by the hospital staff in such a "Precedent Book." Once begun, the "Precedent Book" will be continued because its usefulness will be appreciated.—*The New England Journal of Medicine*, August 8, 1929.

MISCELLANY

Items for the News column must be furnished by the twentieth of the preceding month. Under this department are grouped: Comment on Current and Recent Articles in the Journal; News; Medical Economics; Correspondence; Department of Public Health; California Board of Medical Examiners; and Twenty-Five Years Ago. For Book Reviews, see index on the front cover, under Miscellany.

NEWS

Medical School Opens.—With a capacity registration of one hundred and one students and a teaching and laboratory staff of twenty-four, the School of Medicine of the University of Southern California has begun its second year. In accordance with its announced program it is offering this fall the first two years of preclinical work. In 1930 it plans to add the first year of clinical training to its curriculum, and in 1931 to round out the full four years of work by adding the second year of clinical work.

Under the direction of Dean William D. Cutter there has been gathered together a complete preclinical teaching staff, consisting of five professors, two associate professors, four instructors, six demonstrators, and six assistants. In building up this faculty Dean Cutter has brought men and women from all sections of the United States with the view of assembling the best teaching staff to be had and thereby laying the foundation for a medical school that would be comparable to the leading medical schools of the nation.

As professor of anatomy Dr. Paul S. McKibbin, formerly head of the department of anatomy, University of Western Ontario Medical School, and latterly professor of anatomy at the University of Michigan, has been named. To the post of professor of biochemistry has been appointed Dr. Harry J. Duel, who has been successively instructor and assistant professor of physiology at Cornell University, and professor of physiology at the University of Maryland. As professor of pathology and bacteriology has come Dr. Ernest M. Hall, recently assistant professor of physiology at Stanford University and pathologist at Palo Alto Hospital and Saint Vincent's Hospital, Los Angeles. To the position of professor of medicine and chairman of the department of medicine has been appointed Dr. Burrell Otto Raulston, a member of the staff of the Saint Vincent's Hospital since 1926.

From the University of California at Los Angeles, where he was associate professor of parasitology, has come Dr. John F. Kessel to be associate professor of bacteriology and parasitology. From the faculty of the University of Oregon Medical School, where he was assistant professor of pharmacology, there has been called Dr. Clinton H. Thienes to be associate professor of pharmacology.

Four have been appointed to the staff in the rank of instructors: Dr. Esther H. Bartosh, formerly instructor in the College of Medical Evangelists and more recently associated with the City Maternity Service, Los Angeles, as instructor in anatomy; Dr. Philip Randall Fulton, former medical missionary in South China and among the Navajo Indians, and superintendent of hospitals in Linchow and Canton, China, and Ganado, Arizona, as instructor in anatomy; Frederick C. Messer, assistant and instructor in physiological chemistry, Syracuse University, as instructor in biochemistry; and Dr. Lawrence Parsons, formerly assistant pathologist, Los Angeles County Hospital, as instructor in pathology.

To the demonstration staff of the school the following have been named: Demonstrators in anatomy—Dr. Clifford L. Bartlett, former director, diagnostic laboratory and out-patient clinic, Methodist Hospital of Southern California; Dr. Arthur H. Nixon, former assistant in pathology, University of Chicago; Dr. Floyd R. Parks, former instructor in pathology, Tufts

College Medical School; Dr. Elroy F. Sheldon, recently intern at the California Hospital; and Dr. Kenneth W. Taber, formerly intern, Methodist Hospital of Southern California. Demonstrator in pathology—Dr. Joseph C. Vinetz, resident physician and surgeon, Saint Vincent's Hospital, Los Angeles.

Six have been appointed assistants. They are: Dr. Joseph S. Butts, former instructor in physiological chemistry, Massachusetts Agriculture College, as assistant in biochemistry; George W. Hewitt, formerly laboratory assistant and technician in chemistry, University of Southern California Medical School, as assistant in bacteriology; Ruby S. Moede, technical assistant in physiology and pharmacology; C. C. Prouty, formerly assistant professor of bacteriology, University of Idaho, as assistant in bacteriology and parasitology; Edythe Josephine Rose, formerly of the department of bacteriology, University of California, as technical assistant in bacteriology; and Paul W. Smith as teaching fellow in physiology and pharmacology.

Permanent Organization of the Pan-Pacific Surgical Congress.—Following the close of the Pan-Pacific Surgical Conference, permanent organization was decided upon, and Dr. George W. Swift was elected first president.

Other officers elected were: Secretary and treasurer, Dr. F. J. Pinkerton, Honolulu; chairman for Pacific Coast area, Dr. E. L. Gilcreest, San Francisco; vice-chairman Pacific Coast area, Dr. Robert Matson, Portland; member of council for Honolulu, Dr. N. M. Benyas.

Chairmen and vice-chairmen for the various other areas are to be selected later. The next meeting of the organization will be held in Honolulu in 1932. While the delegates unanimously agreed that no more pleasant place than Honolulu could be found for the conference, some believed it would be wise to meet in various countries of the Pacific, after holding the next conference in Honolulu. The naming of Honolulu as a permanent meeting place was finally left in the constitution of the organization, when it was pointed out that an amendment to the constitution could be made when necessary.

Hope of expanding the organization into a medical conference, with surgery only one section or of meeting with the Pan-American Medical Association or the Far Eastern Association of Tropic Medicine, also was discussed.—*The Honolulu Territorial*, 1929.

Eighty-First Semiannual Meeting of the Southern California Medical Association.—The Southern California Medical Association will hold its eighty-first semiannual meeting in the Beaux Arts Hall, Los Angeles, Friday and Saturday, November 8 and 9, 1929. One session will be devoted to the consideration of the cost of medical care and hospitalization. Among the other subjects to be discussed are the following:

Recent European advances in cancer therapy; sodium amytal as a general anesthetic; mechanism of the production of symptoms in chronic constipation; present status of therapeutic procedure for contraction of the bladder neck; end-results of pyelitis in children; symposium on headaches; esthetic plastic surgery; and the treatment of skull fractures.

Professor Oscar Frankl of Vienna will deliver an address at one of the evening sessions.

Cancer Clinic at University of California.—Gift of \$5000 for the equipment of a thoracic surgery and cancer clinic at the University of California was announced yesterday to the regents at their annual meeting by President W. W. Campbell of the university. The \$5000 is the gift of Mr. and Mrs. George H. Roos.

Stanley P. Black Memorial Lecture.—The first of the 1929 Stanley P. Black Memorial lectures was given in the Stanley P. Black Memorial Hall at 65 North Madison Avenue, Pasadena, on Wednesday evening, September 11, 1929.

Dr. Charles Richet, professor of medicine, University of Paris, made the address. His subject was "Food Anaphylaxis on Azotized Basis."

Herzstein Medical Lectures.—The Herzstein Medical Lectures, for which the late Dr. Morris Herzstein left an endowment of \$20,000 to the University of California and Stanford University, will be started this fall, according to plans announced by Dean Langley Porter of California.

In addition to the \$20,000, in which the state university will share, Dr. Herzstein left the residue of his estate to the University of California, approximately \$637,000. In accordance with his wishes, \$100,000 of this sum will be used as an endowment for a chair of biology either in the Medical School or on the Berkeley campus.

Dean Porter states that arrangements have been made with Stanford by which the Herzstein Lectures will be alternated with the Lane Foundation Lectures in the same field, which Stanford now sponsors.

The object of such foundations is to bring to California the world's most outstanding authorities in medicine in order that physicians of the state will have an opportunity to talk to them and hear them speak from the lecture platform. It is believed that programs of this type are invaluable in keeping medical men apprised of the work of their fellow physicians in distant parts of the globe who have achieved eminence by their contributions to the alleviation of human suffering.

Clinical Congress of American College of Surgeons. The American College of Surgeons will hold its nineteenth annual Clinical Congress in Chicago, October 14-18. Headquarters will be at the Stevens Hotel. An intensive program is being planned to make this home-coming event the greatest in the history of the college. The Hospital Standardization Conference will consist of morning and afternoon sessions on Monday to Thursday, inclusive. There will be a series of clinical demonstrations given by George W. Crile, Cleveland; John B. Deaver, Philadelphia; John M. T. Finney, Baltimore; Charles H. Mayo, Rochester, and others. Monday evening's program will include an address of welcome by the chairman of the Chicago Committee on Arrangements, Dr. Herman L. Kretschmer; the address of the retiring president, Dr. Franklin H. Martin, Chicago; the inaugural address of the new president, Major-General Merritte W. Ireland, Washington, D. C.; and the John B. Murphy Oration in Surgery by Professor D. P. D. Wilkie of Edinburgh. Among the foreign visitors will be Dr. James Heyman of Stockholm, Dr. Thierry de Martel of Paris, Visconte Aguilar of Madrid, and Mr. Herbert Tilley of London. Tuesday, Wednesday, and Thursday evening sessions will consist of scientific papers presented by surgeons from the United States, Canada, and from abroad. The annual convocation of the college will be held on Friday evening. The fellowship address will be delivered by Dr. Glenn Frank, president of the University of Wisconsin. The annual meeting of the governors and fellows will be held Thursday afternoon, followed by a symposium on cancer and bone sarcoma. An all-day session on traumatic surgery will be held on Friday in which leaders in industry, labor, indemnity organizations,

and the medical profession will participate. A special program has been arranged that will be of interest to those whose practice is limited to surgery of the eye, ear, nose, and throat. A feature of the Congress will be the showing of surgical films that have been produced under the supervision and approved by the Board on Medical Motion Pictures of the College. New developments in color photography will be demonstrated. In addition to the commercial exhibits there will be scientific exhibits by the departments of the college. A rate of one and one-half the regular one-way fare has been granted on railroads of the United States and Canada to those holding convention certificates.

The Pasteur Society of Central California held a meeting on Wednesday, September 25 at the Hotel Whitcomb to consider various aspects of the recent outbreaks of meningitis.

Dr. J. C. Geiger, associate professor of epidemiology, University of California Medical School, and Dr. H. H. Darling, research associate in medicine, Hooper Foundation, spoke on the epidemiology; Dr. J. C. Perry, senior surgeon, United States Public Health Service, medical director fifth district, on the "Meningitis Control Methods of the Public Health Service"; Dr. E. B. Shaw from Children's Hospital, San Francisco, on "Serum Treatment for Meningitis"; and Dr. W. H. Kellogg, director of the bacteriological laboratory of the State Board of Health, on "Bacteriology and Types of the Meningococcus."

Doctor Geiger has been in close connection with the epidemiological factors. Doctor Darling has recently returned from a trip through the Orient, where he has studied the origin of the epidemics. Doctor Perry has had supervision and control of the recent epidemics among immigrants and is in charge of all public health work of the Southeast coastal district. Doctor Shaw has had considerable experience in the treatment in and about San Francisco. Doctor Kellogg is in close contact with the bacteriological investigation throughout the state.

TWENTY-FIVE YEARS AGO*

EXCERPTS FROM OUR STATE MEDICAL JOURNAL

Vol. II, No. 10, October 1904

From some editorial notes:

. . . *Intelligent Health Board.*—There are various ways in which communities gain fame or notoriety. One pretty good way is through the local Board of Health. San Francisco seems to have gained somewhat more than its share of notoriety in this manner, and there appears to be a good, big lot of it still coming. The Board of Health has just issued a brief pamphlet entitled "Health Hints for the Household—A Brief Treatise on Infectious, Contagious or Communicable Diseases." This is a curious collection of conglomerate cogitations collected and compiled, not by a lunatic, but "under the auspices of the Board of Health"!. . .

. . . Doctor Welch ought not to have delivered the Lane Lectures until after perusing the "Health Hints for the Household"; he could have picked up a whole lot of real first-class education, and a few pointers on infection as well. "Man and other animals, and especially their excreta, are the prime movers of infection." And again: "Cleanness or cleanliness means then the absence of dirt, and though an acquired taste." Just like olives, sardellen, etc.

. . . *To County Secretaries.*—The Publication Committee desires to thank those county society secretaries who have sent in reports of their society meetings. Thanks are also due a number of secretaries

* This column aims to mirror the work and aims of colleagues who bore the brunt of state society work some twenty-five years ago. It is hoped that such presentation will be of interest to both old and recent members.

for the prompt manner in which they answer letters. If there is one virtue more commendable than all others, it seems to be that of promptly answering a letter. There are a few secretaries who do not send in regular reports, or who did do so but have fallen from grace. Will you gentlemen please consider the value to your members of sending in these reports? . . .

. . . *Danger Ahead.*—It is time that every physician in the state took heed for the future. The state legislative body will assemble to tinker and tamper with the laws before many months have passed, and it now seems absolutely certain that an attempt will be made to so modify the Medical Practice Act as to completely emasculate it. . . .

. . . *A Curious Condition.*—There seems to be more or less complaint all over the country in regard to the hodgepodge appearance of the average drug store, and the large number of proprietary medicines and nostrums carried and sold by the average druggist. . . .

. . . *Another State Society Journal.*—The *Journal of the American Medical Association* publishes a lot of advertising of this sort, and because it is guilty of breaking to smithers the American Medical Association "principles of ethics," most medical journals of the country do the same thing, and for excuse proudly boast that the advertisement appears in the Association journal, and hence it must be all right. The "uriseptin" case, already cited, is rather a good illustration for the reason that the "ad" was thrown out of our journal some months ago (as soon as we learned of the fakeness of the "formula"). . . .

From an article on "Cases of Acute Suppurative Appendicitis Treated by the Ochsner Method" by Wallace I. Terry, M. D., San Francisco:

. . . I should feel like apologizing to this society for presenting a paper on the time-worn topic of appendicitis were it not that my experience in dealing with several cases of the acute suppurative form by the Ochsner method has been so fortunate that I wish to record my belief in the rationality and value of the procedure. . . .

From an article on "Epinephrin—The Active Principle of the Suprarenal Gland—A Second Word" by Philip Mills Jones, M. D., San Francisco:

. . . Now what is it all about? Why, about what we shall call the crystallin-active blood-pressure-raising principle of the suprarenal gland. Obviously we cannot call it all that, and live. Nor can we call it adrenalin-adnephirin-adrenamin-adrenol-adrin-caprenalin-hemisin-hemostatin-suprarenalin; life is too short. Aberhalden and Bergell use the name "epinephrin," and do not demand that "it be blotted from the literature," as evidenced by the title of their paper, "Über das Epinephrin (Epiprenan)."

Epinephrin seems to be a pretty good name for this particular thing. Some years ago Abel discovered that a chemical acting like this did exist, though he had not isolated it, and he named it epinephrin. That sort of thing has happened many, many times in chemical work, and is well known and accepted. Helium was known to exist as such, and was named long before anyone isolated it as an element; so with radium. And so, too, so far as the evidence goes, with epinephrin. . . .

From reports of county societies:

. . . *San Diego County.*—The regular meeting for the month was held on September 2, at which time Dr. R. L. Doig read a most excellent paper on the use of epinephrin, the active principle of the suprarenal gland, particularly in asthma. . . .

. . . *San Francisco County.*—The regular meeting for the month was held on the evening of September 8, the president in the chair. Doctors Herbert Moffitt and C. M. Cooper drew attention to the value of good radiograms of the chest in helping to differentiate between intrathoracic tumors and aneurysms, especially in those cases where the clinical fluoroscopic findings were not in accord. . . .

. . . A discussion upon the progress made by the Executive Committee in the matter of the arrangements for prosecuting illegal practitioners was precipitated by Doctor Tait. . . .

. . . It is quite apparent to your committee that this was due to the fact that the *Journal of the American Medical Association* receives in its advertising columns material of the most questionable character. When one considers that one of the principles of ethics of the association is that "It is equally derogatory to professional character for physicians to dispense or promote the use of secret remedies," it is plain to your committee that the committee on ethics of the American Medical Association realizes that the journal has grossly abused the principles for which the association stands, and that it hesitates to commit itself to a public acknowledgment of this fact. . . .

. . . *Santa Barbara County.*—Resolved, That it is the sense of the Santa Barbara County Medical Society that when "diphtheria" exists among poor people the city should furnish free of charge a sufficient quantity of antitoxin for the treatment of each case; also a sufficient quantity for the purpose of preventing the spread of the disease.

The secretary is hereby instructed to present a copy of the above resolution to the Honorable Mayor and City Council. . . .

From an item in California Academy of Medicine Proceedings:

. . . Doctor Cooper also called attention to a method of x-ray examination practiced by him, and so far as he knew, an original method. In examining the abdomen, he inflated the colon with air and then examined with the screen, thus being able to see clearly the shadow of the kidneys, liver, spleen, colon, etc. Doctor Moffitt commended the proceeding highly, and had found it of very great usefulness. . . .

From an item on the State Nurses' Association:

. . . The California State Nurses' Association is an organization that should receive the heartiest support of every physician. . . .

. . . The State Association hopes to secure legislation which, through state registration of nurses, will mark a most important advance in the status of the profession in California. . . .

From some personals:

. . . Professor William Osler, until recently of Johns Hopkins, has been appointed regius professor of medicine at Oxford University, England, and we are advised that King Edward has been graciously pleased to confirm the appointment. Oxford is to be congratulated upon securing a man who is one of the best, if not indeed the best physician, student and exponent of medicine of his time. . . .

From minutes of the Council—Membership in sectarian societies—Councilor districts rearranged:

. . . The Council met on September 10 and transacted a good deal of business.

Among other things it arranged the councilor districts as follows: First, San Diego, Riverside, Orange, San Bernardino; second, Los Angeles, Ventura, Kern; third, Santa Barbara, San Luis Obispo, Monterey; fourth, Fresno, Kings, Tulare, Merced, Mariposa, Madera, Stanislaus, Tuolumne; fifth, Santa Clara, San Mateo, San Benito, Santa Cruz; sixth, San Francisco; seventh, Alameda, Contra Costa, San Joaquin, Calaveras; eighth, Sacramento, Amador, El Dorado, Alpine, Placer, Nevada, Yuba, Sutter, Sierra, Yolo, Butte, Plumas, Lassen, Inyo, Mono, Glenn, Colusa, Tehama, Shasta, Modoc, Siskiyou; ninth, Marin, Sonoma, Lake, Mendocino, Solano, Napa.

The Council ruled that membership in a homoeopathic or eclectic medical society constituted "supporting" sectarian medicine, and that consequently members of such societies could not be eligible for membership in affiliated county medical societies. . . .

DEPARTMENT OF PUBLIC HEALTH

By W. M. DICKIE, *Director*

Health Officers Will Meet in Oakland.—The regular annual meeting of the health officers of California will be held in Oakland, October 7 to 11, 1929. This meeting will be held, as usual, in conjunction with the annual conference of the League of California Municipalities. All sessions will be held in the Hotel Oakland.

Typhus Fever Case Reported in Northern California.—A woman, past middle age, arrived in Stockton recently from Texas, having crossed the border into Mexico while en route. Before her arrival in Stockton she complained that she felt somewhat languid and not particularly anxious to travel by automobile. She suffered a distinct chill followed by fever, which was followed by coughing and the appearance of a number of rose spots, which became quite profuse and well distributed over the entire body. It was thought at first that it might be a case of typhoid fever, but the run of temperature, pulse, the profusion of the rose spots and the similarity of the rash to that of typhus fever aroused the suspicions of the attending physicians and the health officer, with the result that the case was pronounced one of typhus fever. A positive Weil-Felix test was obtained, but tests on guinea pigs with blood inoculations from the patient produced negative results.

According to the history of the case, the patient left her home in a small town of Texas, where she had lived for six years, stopping at El Paso May 24. During the day she took a street-car ride across the Mexican border, spending some time in Juarez, returning to El Paso at night. The hotel where the patient stopped was very neat and clean. On May 25 she proceeded to Los Angeles, where she spent several days. She arrived at Yosemite May 30 and complained that she felt chilly during a stay there. The patient arrived in Stockton on May 31, and on June 3 complained of languidness. On June 4 she had a distinct chill, followed by a fever. A physician was called on June 6, and on the following day came the appearance of the rose spots, which, on June 9, had become very profuse. The patient's temperature dropped to normal on June 19, possibly fifteen days from the time of the onset. The patient is of a superior type, and the evidence would indicate that the disease was picked up on her trip to the Mexican border. Recent public health reports indicate that endemic typhus fever may be transmitted by means other than the body louse, and it would seem that this case must have been contracted in some other manner.

Clams Placed Under Quarantine with Mussels.—Because of the appearance of many cases of poisoning in persons who had consumed mussels gathered along the coast of northern California early in July, a quarantine was placed upon these shellfish under the provision of which their sale or offering for sale was prohibited. This quarantine originally included only San Mateo County, but later was extended so as to include all of the territory from Monterey County to the Oregon line. On August 3 and 4, thirteen cases of mussel poisoning, with one death, and six cases of clam poisoning, three of which were fatal, were reported to the State Department of Public Health. This was the first time that cases of clam poisoning had been brought to the attention of this department. These clams were gathered along the coast line of Marin and Sonoma counties and San Mateo County was included later because of the fact that poisonous shellfish of this order were gathered on the shores of that county. Specimens of different varieties (quahog, Washington, and horseneck) were collected and submitted to the laboratory of The Hooper Foundation for Medical Research, University of California, for examination. These were found

to be highly toxic, but specimens of abalones and oysters, which were also submitted for examination, did not show any toxic condition.

It is apparent that during the height of the summer season mussels and clams may be highly poisonous. This condition gradually abates until the beginning of winter, when they do not show any signs of poison. With the beginning of spring, however, the toxic conditions starts, reaching its peak again during the height of midsummer.

Mosquito Control Measures Instituted in Southern California.—The anopheles mosquito, which transmits malaria, fortunately is not found in southern California, but other types of mosquitoes which exist here may inflict painful wounds which are likely to become infected, causing considerable personal discomfort, if not acute illness. Wherever there is standing water, mosquitoes may breed. The variety that is commonly found in the salt marshes is particularly ferocious, and beach parties and bathing parties are subjected to great discomfort through the attacks of these insects.

Four mosquito abatement districts are in process of organization in southern California at the present time. These are located in the vicinity of Venice, in Orange County, San Diego, and Riverside. Under the Mosquito Abatement District Act, funds are derived through a tax levy based upon assessed valuations of property included within the district. The operations of a mosquito abatement district consist mainly in the elimination of all places where standing water may collect and in the destruction of mosquitoes while they are in the larval stage. The direct activities are drainage of bodies of standing water by means of ditching; filling depressions so as to prevent formation of pools of water; oiling pools, where drainage is not feasible, for the purpose of destroying mosquito larvae; the poisoning of mosquito larva by means of insecticides; and the implantation of top minnows where none of the methods, as outlined, may be feasible.

The top minnow used for this purpose in California is *Gambusia affinis*, which is a native of the southern and eastern states. The State Department of Public Health imported six hundred of these fish into California in 1922, and it is estimated that there are now fifty to sixty millions of these mosquito destroyers in California waters. The department maintains thirty hatcheries whence mosquito abatement districts throughout the state receive their stocks for mosquito control work. This mosquito fish is viviparous, the young being born directly from the body of the mother fish. The male of the tribe is from three-quarters of an inch to one inch long, and the female grows to a length of one and one-half to two inches. They are extremely tolerant of adverse conditions and will even live in brackish water, but not in salt water. They constitute one of the most valuable allies now being used throughout California in the control of mosquitoes.

With the addition of four new mosquito abatement districts in California, the total number to be operating within the state will rise to more than twenty. These districts have proved their value in the control of these pestiferous insects, which constitute a distinct menace to health and comfort.

Changes Announced Among Health Officers.—On August 1, Dr. W. R. Hoffman succeeded Mr. M. E. Reed as city health officer of Roseville.

Beginning the first of July, Dr. John T. Harrington took over the duties of the Santa Cruz City Health Department, succeeding Dr. N. R. Sullivan, who has been city health officer for several years.

Dr. W. E. Weddle was appointed city health officer of Parlier August 1, 1929, taking the place of Dr. R. H. Carter.

Dr. Louis L. Robinson was appointed health officer of Larkspur, Marin County, August 1, 1929, in place of Dr. Lester Newman.

CALIFORNIA BOARD OF MEDICAL EXAMINERS

By C. B. PINKHAM, M. D.

Secretary of the Board

News Items, October

One hundred and ninety-four graduates of medical colleges and seventeen graduates of chiropody schools passed the July written examinations given by the Board of Medical Examiners.

The Department of Professional and Vocational Standards has been organized with Mr. James Collins of Long Beach, director, and Mr. Harry C. Morgan, former foreign and intelligence operator for the government during the war, as executive secretary with offices in Room 219, State Capitol Building, Sacramento.

Following true bills against five men as leaders in the fake license syndicate, State's Attorney John A. Swanson called in leading doctors to check up on medical and dental licenses of practitioners of the county. Efforts to brand Dr. H. H. Miller, recently dismissed as head of the State Department of Registration and Education, charged as leader of the fake license bureau, continued tonight. Named with Miller in the true bills are L. Mitchell Blaine, Harry Goldstine, Albert Barron, and Dr. John Torbert. Blaine, Barron, and Torbert found "customers" for Miller, it is alleged, inducing medical students who could not pass their examinations to buy licenses. Prices ranging from \$1000 to \$2400 (International News Service, dated Chicago, July 31, 1929, printed, Washington, D. C., *Herald*, August 1, 1929). Previous entry, September 1929.

According to a report from the Nevada Board of Medical Examiners, an individual giving the name of A. B. Cheatham, claiming to be the A. B. Cheatham who, for the past fifteen years is reported to have been located at Millerview, Texas, obtained a license to practice in the State of Nevada, which was recently reported revoked on the grounds that the same had been obtained on presentation of fraudulent credentials. The individual, claiming to the Nevada board that he was A. B. Cheatham, is said to be Samuel A. Cheatham. Investigation fails to disclose that he has any medical credentials. However, he has been ship surgeon sailing from the port of San Francisco.

Damages aggregating \$75,000 for automobile injuries received last February 2 are asked by Mrs. Tillie C. Randall, a 70-year-old inmate of the San Francisco Relief Home, in two Superior Court suits filed yesterday. And in one of the suits is incorporated charges that the permanently injured woman was refused aid by three hospital associations to which, she charges, she paid a monthly stipend over a period of years for the emergency in which she finally became involved. . . . In the charges she has filed against the Liberty Hospital Association, Grace Darling Hospital Association, and the International Hospital Association, the aged woman sets forth that when she applied for medical assistance as specified in her contract, she was refused. . . . Inquiries subsequent to the suits disclose that all three hospital associations are listed in the same office in the Phelan Building. . . . (San Francisco *Examiner*, September 4, 1929).

Percy Purviance, whose Berkeley chiropractic college and Berkeley chiropractic high school were ordered closed by court decision as "diploma mills," yesterday asked the Alameda County Board of Supervisors to permit him to dissect cadavers for instructional purposes at the "Golden Gate Chiropractic College and School of Physiotherapy and Pysictherapy." Board members decided that the request for the per-

mit was a matter for the institutions' commission to worry about (*Martinez Gazette*, July 31, 1929). Previous entries December, 1925; January, February, June, July, September, October, 1926; February, 1927; March, April, July, September, 1928; January, 1929.

George (Rush) Meadows, former University of Southern California football star, attorney and convict, today was sentenced by Superior Judge Charles Fricke to serve seven to twenty years in Folsom prison. He was convicted on eleven counts of grand theft of \$31,000 from the family of John R. Osborne, allegedly obtained on representations to them that he could obtain a pardon for the latter, a prisoner at Leavenworth penitentiary (Associated Press dispatch, dated Los Angeles, August 22, 1929; published in the San Francisco *Examiner*, August 23, 1929). September "News Items" mentioned Meadows as associated with Higashi in an alleged diploma mill operated in Los Angeles.

Found guilty of practicing without a physician's certificate, S. Takeda, owner of a local massage parlor, was sentenced to sixty days in the county jail by Judge Phil Hayward. It appeared from the evidence submitted that the Japanese had violated the Medical Practice Act. . . . and the judge suspended the sentence, pending Takeda's future actions (Watsonville *Pajaronian*, August 22, 1929).

Named by Mrs. L. Gonzales as the person who performed her illegal operation for a fee of \$10, Fredrico Afaya, thirty-nine, shoemaker and spiritualist, yesterday was arrested. . . . (Los Angeles *Illustrated Daily News*, July 31, 1929).

Conviction of petty theft in connection with asserted operation of a "diploma mill," Dr. Charles A. Cale, chiropractor, was sentenced to pay a fine of \$750 and serve ninety days in jail yesterday by Municipal Judge Caryl Sheldon. The chiropractor, who conducts the Cale Chiropractic College at 406 West Seventh Street, was found guilty by a jury in Judge Sheldon's court last week. Following his sentence yesterday, Doctor Cale gave notice he would appeal his case, and was released on \$1000 bond (Los Angeles *Examiner*, August 29, 1929; prior entry, September 1929).

Dr. R. W. Cook, 6277 Van Nuys Boulevard, reported the theft of his medical case containing a quantity of narcotics and a hypodermic set from his automobile to officials of the local police division (Burbank *Tribune*, August 7, 1929). Licentiatees are again warned against depredation by addicts. (Previous entries appear May 1927.)

Reports relate Beatrice Cary recently pleaded guilty in Santa Monica on a charge of violation of the Medical Practice Act, and was sentenced by Judge W. R. Garrett to sixty days in the county jail; sentence suspended for two years on condition that she no further violate the Medical Practice Act.

Trial of George Darrow, Azusa physician charged with murder in connection with the death of Mrs. Jennie Peterson, twenty-three years of age, was continued yesterday by Superior Judge Wood to September 6 next. Mrs. Peterson is asserted to have died of an illegal operation the state charges was performed by Doctor Darrow. . . . (Los Angeles *Times*, August 27, 1929).

According to the report of Special Agent Davidson, "Dr." d'Orgler, alias "Dr." de Zita, appearing at an Oakland theater, whose handbills announced him as Morocco's mystic seer, psycho-analyst. . . . "who sees all, knows all, and tells all," was found guilty in the San Francisco Police Court, September

7, 1929, and sentenced to sixty days in the county jail, such sentence being suspended on condition that he leave San Francisco on or before Tuesday, September 10. The investigator reports finding several prescriptions written by "Dr. William d'Orgler," who claims to have been licensed in Oregon but lost his license because of alleged illegal operations. However, the Oregon Board of Medical Examiners related that they find no record of such an individual.

That "Doc" G. O. de Moss, Tracy and Reno gambler, was not one of the machine gun bandits who robbed the Southern Pacific train of \$16,000 at McAvoy, Contra Costa County, on June 22, was the declaration of four passengers who confronted him in the San Jose jail, which was announced yesterday in the sheriff's office in Martinez . . . (San Francisco *Chronicle*, August 22, 1929). It is reported that George de Moss is now held in the Santa Clara County jail on an asserted charge in connection with the death of a vegetable peddler, which followed an alleged assault on the county road. According to the State Bureau of Criminal Identification, he is alleged to be Dr. George Olem de Moss, licensed in Illinois in 1914 and in Washington in 1921.

A. Dominguez, known as the "miracle man," was on September 3, 1929, found guilty in San Bernardino of violation of the Medical Practice Act, and sentence is set for September 14, 1929. Previous entries.

It is reported that Emily Fonceca on August 2, 1929, pleaded guilty in the Municipal Court, Los Angeles, on a charge of violation of the Medical Practice Act, and was sentenced to ninety days in the city jail; sentence suspended for two years' probationary period.

Dr. Thomas Greig, fifty-one, of 2667 Telegraph Avenue, was committed yesterday to the Ukiah State Hospital by Superior Judge J. J. Allen. He was arrested Monday, when he frightened patients in his office by flourishing a revolver, and fired two shots at Police Inspector Gene B. Woods and E. C. Terry. . . . Doctor Greig's wife told the police that her husband was in an alcoholic stupor when he fired. Dr. H. A. Makinson, Dr. Sydney Smith, and Judge Allen, following an examination of Doctor Greig, found him not insane but so addicted to alcohol that he had lost self-control . . . (San Francisco *Examiner*, August 18, 1929).

J. Q. Heffner, who has been going around the community giving what he calls "chirothesian" treatments, has been arrested, it is reported, and was fined \$100 and given a ten-day sentence in the county jail. The arrest was made as the result of a report made by a local chiropractor, who informed the State Chiropractic Board. The board sent an inspector to investigate the matter, and it was found Heffner was practicing without a license (Montebello *News*, July 26, 1929).

Arrested during the investigation of a nation-wide diploma mill, Dr. Kimi Higashi, forty-six, 111 North Bunker Hill Avenue, faced preliminary hearing today. The specific charge against the Japanese doctor is violation of the felony gun law, which makes the possession of a weapon by a man previously convicted of a felony a penitentiary offense. Higashi was arrested upon information given the police by a Chinese merchant, who says he was approached by the Japanese with a fake medical diploma who offered it for sale. According to the story told by the Chinese, Higashi guaranteed that the owner of the diploma would be able to sell narcotics without being subject to arrest . . . (Los Angeles *Record*, July 30, 1929). Previous entry, September 1929.

According to reports, Elida Salis was on September 4 found guilty of violation of the Medical Practice Act and sentenced to ninety days in the county jail, suspended for two years on condition of no further violations of the Medical Practice Act. She is related to have treated Mexicans with herbs, medicines, etc.; also treated broken arms and legs without any training whatsoever.

W. H. H. Miller has been indicted on the charge of counterfeiting and selling Illinois medical licenses. This is the same Miller who was found guilty and fined for irregularities in examinations and the issuance of licenses while he was director of the State Department of Registration and Education. Before his first trial, Miller's conduct had become so notorious that former Governor Small, tolerant as he was, dismissed him. The purpose of the registration bureau is to protect the public against incompetence and quacks. Instead the department has been used to protect and promote the fortunes of quacks and incompetents, butchers and bunglers operating with official sanction. This consequence, of course, was not foreseen by those who originally sponsored the creation of the department . . . (Editorial, Chicago *Tribune*, August 6, 1929).

Charged with performing an illegal operation upon a minor girl, Dr. Farrar B. Parker, forty-three, and his wife, Mrs. Lillian Parker, a nurse, were arrested yesterday at their home in Long Beach. The pair have been under surveillance since August 19, when an illegal operation is alleged to have been performed upon Irene Schrode, seventeen, of Los Angeles. Doctor Parker denied the charges, but both he and his wife were being held in the city jail last night (Los Angeles *Illustrated Daily News*, August 23, 1929).

Dr. Robert Thompson, central figure in the sensational murder of Eva Swanson, a nurse, here in 1910, may be brought back to San Francisco to complete his unfinished prison sentence for the crime. Paroled from San Quentin after serving twelve years of a twenty-year sentence, Thompson is now serving time in a New York penitentiary on another charge, it was learned today. State parole officials announced they plan to seek his extradition when his term in New York is up. He is charged with violation of parole. Eva Swanson died from the effects of an illegal operation in April 1910. Her body was dissected and buried in the basement of a house at 327 Eureka Street. Doctor Thompson was convicted of second degree murder (San Francisco *Examiner*, August 22, 1929). Robert Thompson was then reported known as Doctor Grant and, according to a recent report from New York, has other aliases.

While attorneys for Dr. Frank P. Westlake, found guilty of the "torso murder" of Laura Mae Sutton, today declared they will seek a new trial, Mrs. Emma Roach, juror, charged she was coerced into voting conviction. She said she had held out thirty-one hours, then submitted to the will of the other eleven, while believing the physician innocent. Westlake, a physician, was convicted for killing Mrs. Sutton for her estate (International News Service dispatch, dated Los Angeles, September 9, printed in the San Francisco *Examiner*, September 10, 1929). Former entry, July 1929.

Typhoid is in its seasonal rise.

Two cases of undulant fever were reported last week.

Two cases of tularemia were recorded during the past month.

Epidemic meningitis is not showing the same reduced prevalence that it showed early in July.

CALIFORNIA AND WESTERN MEDICINE

VOLUME XXXI

NOVEMBER, 1929

No. 5

CONCERNING THE RELATIONSHIP BETWEEN FIBROIDS OF THE UTERUS AND THE THYROID GLAND*

By FREDERICK HOWARD FALLS, M. D.
Chicago, Illinois

THERE has been considerable interest manifested in recent years in the relationship between the endocrine system and the female reproductive organs. Divergent opinions more or less substantially supported, by clinical observations for the most part, have been expressed by various writers. As a special phase of this subject considerable discussion has arisen regarding the etiologic interrelationship between uterine fibroids and the thyroid gland. In order to throw further light on this subject this investigation was undertaken to determine:

1. Whether or not thyroid dysfunction was a common concomitant of uterine fibroids.
2. The influence that a developing fibroid might exert on a thyrotoxic patient.
3. The influence that thyroid disease might have on preformed uterine fibroids.
4. What precautions are necessary in the management of a patient having fibroids complicated by thyrotoxicosis.

REVIEW OF THE LITERATURE

A review of the literature in this connection gives conflicting views. Most of the observations relate to the connection between the genitals and the thyroid, and only incidentally specifically mention the fibroid relationship. Thus Kleinwachter¹ mentions a peculiar hypoplasia of the uterus and adnexa together with a thickening of the parametrium in the region of the cervix in patients with Basedow's disease. This condition was first pointed out by the elder Freund² and was also subsequently verified by his son, H. W. Freund.³ The latter claims to have demonstrated thyroid enlargement associated with the growth of uterine myomata in forty-four cases and that these enlargements did not subside after the removal of the fibroid, as happens after pregnancy. He notes

also an increase in the volume of the parenchyma of the gland in microscopic sections in those cases coming to postmortem examination. These changes in the thyroid gland were noted in those cases presenting subserous rather than interstitial or submucous tumors, and fibromatous rather than myomatous histology. He holds that marked irritation, long continued, acting on the uterine musculature causes permanent thyroid swelling. He feels that the principal method of thyroid stimulation from the uterus is a uterine hormone acting by the way of the blood stream.

Von Graff⁴ and J. Novak found, in a series of thirty-six women with Basedow's disease, only two cases showing fibroid disease. In one of these Basedow's symptoms did not appear until after vaginal hysterectomy, and the other manifested the disease only after x-ray treatment of the myoma. These would appear to be latent Basedow's which were associated with fibroids but not active until operative or x-ray menopause was initiated. They feel that hypoplasia and hypofunction of the genitalia may be the cause of certain cases of Basedow's disease and that inversely the disease may in certain cases give rise to genital atrophic changes as pointed out by Freund and Kleinwachter.

Leahy,⁵ Seed,⁶ and Percy⁷ state in personal communications that, in their opinion, there is no causal relationship between hyperthyroidism and uterine fibroids.

Marine⁸ says there is very meager evidence of a thyroid sex gland interrelationship. William M. Thompson⁹ suggests that the uterine myoma is frequently more troublesome as a woman approaches menopause, and this corresponds to the time when the simple thyroid adenoma may begin to give toxic symptoms. He reports four cases in which uterine fibroids, two of these complicated by pregnancy, increased the symptoms of Basedow's. The myocardial weakness noted in these cases, he suggests, may be on a hyperthyroidism basis; and also the cell proliferation in the fibroid uterus may activate the thyroid. These views are based on entirely insufficient clinical material, and too little critical analysis to be convincing. On the other hand, H. G. Hill¹⁰ has recently reported two hundred and six cases of exophthalmic goiter,

* From the Department of Obstetrics and Gynecology, College of Medicine, University of Illinois, Chicago.

* Read before the Obstetrics and Gynecology Section of the California Medical Association at the Fifty-Eighth Annual Session, May 6-9, 1929.

with special reference to the significance of sex events in their etiology. He finds that puberty, menopause, and pregnancy seem to have a definite significance. It is interesting to note that fibroids have no place in the discussion.

Bandler¹¹ feels that if overproduction of thyroid secretion decreases the activities of the ovaries, as shown by menstrual inhibition, it is reasonable to suppose that diminution of the ovarian function may result in a relative hyperfunction of the thyroid. Thus he explains the symptoms of hyperthyroidism that come on at the menopause without the exophthalmos and goiter.

Hertzler¹² examined one hundred patients presenting mild degrees of toxic thyroid. He found the basal metabolic rate equivocal, and that those patients with small goiters did not do well under the iodids. This writer feels that the association of disturbances of the pelvic organs with thyrotoxic symptoms was too frequent to be disregarded.

THYROID DYSFUNCTION AS POSSIBLE RESULT OF FIBROID PATHOLOGY

The theoretical possibilities of thyroid dysfunction arising from fibroid pathology seem to be limited to the following:

1. Pressure irritation of the pelvic and abdominal sympathetic ganglia directly, or indirectly through irritation of the uterine wall.
2. Secondary changes in the ovaries influencing the normal thyro-ovarian balance. These changes are very common in women with fibroids.
3. Degenerative changes in fibroids leading to the absorption of toxic products which might cause stimulation of thyroid hyperfunction.
4. Anemia, pain, intoxication from bowel or ureteral obstruction by large tumors might produce acute or chronic hyperactivity of the thyroid.
5. Operative shock might produce an acute thyroid crisis.

INFLUENCE OF THYROID ON DEVELOPMENT OF FIBROID

The possibility of the thyroid having a direct bearing on the incidence and development of uterine fibroids appears to be exceedingly remote. The changes that have been described in the uterus of women with Basedow's disease have all been of the retrogressive type with atrophy rather than proliferation as the outstanding feature. Moreover, the cessation of the menstrual function and the menopause praecox, seen in cases of hyperthyroidism, would reduce theoretically the likelihood of fibroid development. There is no clinical evidence that removal of varying amounts of the thyroid gland in a woman with goiter and concomitant uterine fibroid had any demonstrable effect on the fibroid. Conversely, however, we find not infrequently hyperthyroidism coming on rather soon after supracervical panhysterectomy. The effect in these cases might

probably better be explained by the ablation of the ovaries.

INFLUENCE OF THYROID DISEASE ON PREFORMED FIBROIDS

In order to get some first-hand information on these points it was decided to analyze the histories of one thousand cases of fibroids, approximately two hundred and fifty of which had been on my service at the University of Iowa and the University of Illinois, and the rest on my own and other attending men's services of the Cook County Hospital. The two hundred and fifty studied at my university clinics were operated personally in practically all cases. Careful examinations by several members of the staff as well as myself were made and, therefore, any obvious evidence of concomitant thyrotoxicosis was in all probability not overlooked.

Of the County Hospital cases approximately one hundred were assigned to and operated by me personally. All of these were carefully examined independently by the junior and senior intern and by myself before operation.

These cases were analyzed with the following points in mind: age, race, and the type of fibroid. The presence or absence of complicating adnexal pathology was noted and whether or not degeneration was present. Evidence of thyroid enlargement or clinical manifestations of thyrotoxicosis was also noted. Unfortunately the histories were not made with this investigation in mind, and certain deficiencies are found in the data.

Our interest in the type of fibroid is based on the assertion that subserous fibroids are more likely to undergo degeneration, infection, and to cause pressure symptoms on the pelvic and abdominal sympathetic ganglia. We felt that the adnexal pathology also should be noted because of the well-established belief regarding the interrelationship between the ovary and thyroid in the literature. Degenerative changes were noted because of the possible stimulating effect these might have on the thyroid gland.

DESCRIPTION OF ATTACHED TABLES

Table 1 shows the fibroid cases grouped according to age. It will be seen that the age of the

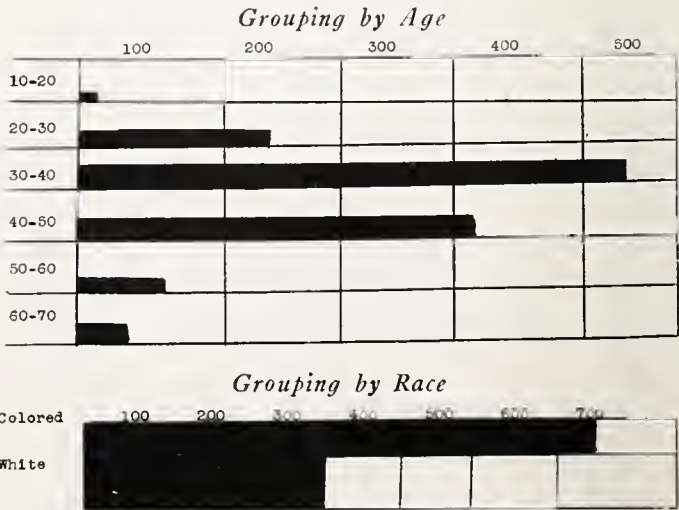


Table 1.—Fibroid cases grouped according to age and race

greatest number of patients with fibroids coming for treatment coincides with that of the greatest incidence of toxic goiter. Plummer¹³ states that exophthalmic goiters occur more frequently between twenty and thirty, and toxic adenomas usually do not occur until thirty-five or forty years of age. Two possible explanations may be given for the coincidence of these figures. The one, that the two conditions by chance occur at this time of life and have nothing to do with each other etiologically. The other, that a certain number of latent toxic goiters are stirred into activity by nervous or blood-borne stimuli emanating from the fibroid uterus. In the light of what follows, the former view seems the more plausible.

There was a noticeable difference in the age of the private and clinical cases collected at Iowa, as compared with the group studied at the Cook County Hospital; the latter being much younger women. However, the incidence of palpable enlargement of the thyroid gland was practically equal in the two groups. I have also shown graphically the comparison of the white and colored patients, demonstrating the marked preponderance of the colored race in this series. The total number of patients showing either slight enlargement of the gland with or without symptoms of exophthalmic goiter or toxic adenoma was seventy-six. Of these, three were exophthalmic goiters or toxic adenomata among the Iowa and Research Hospital series, and two exophthalmic goiters among the county cases, a total of .07 per cent. This certainly would not appear to be an undue percentage of toxic goiters among a thousand women in the goiter belt of the Great Lakes and eastern Iowa, and confirms the general clinical impression that the combination of symptoms producing fibroid and thyrotoxicosis of sufficient severity to be apparent on careful general examination is comparatively uncommon.

Table 2.—An analysis of the cases with regard to the incidence of adnexal pathology shows a very large proportion of the total number had some adnexal pathology of which the most common lesions were chronic ovaritis with salpingitis,



Table 2.—Incidence of adnexal pathology and thyroid enlargement

pelvic peritonitis with adhesions, pus tubes, and cystic ovaries of varying size. A graph of these cases is shown in Table 2, and a comparison between the cases studied at Iowa, Illinois Research, and Cook County hospitals demonstrates that there is a great variation in the incidence of adnexal disease in these series.

The ratio of the patients having adnexal pathology to those having none was as six is to one in the Cook County Hospital group, as two is to three in the private cases, as two is to one among the Iowa clinical cases, and as three is to one among the clinical patients at Illinois Research Hospital. Combining these groups, the incidence is found to be as 3.5 is to one. On the other hand, it will be seen that the incidence of pathologic enlargement of the thyroid gland is approximately the same in all groups. If degeneration of ovaries or irritation of the pelvic sympathetic ganglia predisposes to thyroid disease we would expect more evidence of goiter among the group of patients showing the highest incidence of pelvic pathology. It would appear, therefore, that little significance can be attached to this complication as a factor in the production of thyroid disease in this series. Three cases had had thyroidectomy before presenting themselves for treatment for fibroids. Of these cases one had bilateral salpingitis, one bilateral hydrosalpinx, cystic ovary and dermoid, and the third had pelvic adhesions. Of five cases showing exophthalmic goiter two showed no adnexal pathology, one developed the goiter symptoms six months after a panhysterectomy; two had bilateral salpingitis, and one of these had cystic ovaries. Of five cases showing toxic adenoma symptoms three had cystic ovaries, one showed no adnexal pathology, and one had pelvic peritonitis. Thus it is seen that the incidence of adnexal pathology in the toxic goiter cases is as three is to one, which is no greater than that among the general average of cases.

Among the County Hospital cases one hundred and seventeen showed degeneration of one kind or another: calcareous, edematous, red and necrosis with infection. In only twenty-one of these was there a concomitant enlargement of the thyroid gland, and there were no degenerative changes in connection with the toxic adenomas or exophthalmic goiters in this series. Among the Iowa cases twelve were degenerated, and only one showed a slight thyroid enlargement of nontoxic type. Of the Illinois group ten showed degenerative changes, and of these only two were associated with enlargement of the gland and one of these was a toxic adenoma. It would, therefore, seem that degenerative changes in the fibroids of this series had no appreciable effect in augmenting the symptoms of thyrotoxicosis.

Table 3.—The basal metabolic rate was estimated in thirty-five cases, seventeen of which were run at the Cook County Hospital and eigh-

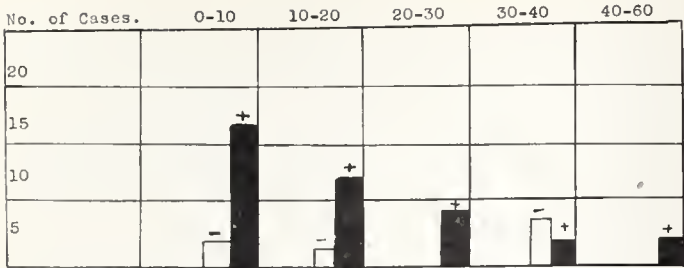


Table 3.—Basal metabolic rate in thirty-five cases.
(Basal metabolic rate in per cent.)

teen at the Research Hospital. The results are shown in Table 3. It will be seen that the great majority of cases fall between the average normal limits of plus or minus 10 per cent. There were, however, eight cases between 10 and 20 per cent plus, and one case as high as 61 per cent plus. There were also four cases with a minus reading. The average of the plus reading was 18.4 per cent and that of the minus reading was 20.1 per cent. These readings were all taken in the morning, before breakfast, under proper conditions of bed rest. The machines used were a Krog metabolimeter at Research and a Jones at County. The readings were made by technicians who were doing hundreds of tests a month, and had many readings of both normal and abnormal patients for comparison.

REPORT ON ONE HUNDRED CASES OF
HYPERTHYROIDISM

The histories of one hundred female patients above the age of twenty and diagnosed thyrotoxicosis; exophthalmic goiter, or toxic adenoma, were analyzed to determine the following points: age, race, type of goiter, vaginal examination findings for fibroids, and history of having had fibroids or an operation for same. In this group were nineteen exophthalmic goiters, twenty-three toxic adenomas, thirty-one thyrotoxicosis, sixteen colloid hyperplastic, colloid ten, and one hyperplastic goiter.

Graves states that 40 per cent of all adult women have fibroids. If this figure be correct, and if the hypothesis can be maintained that the thyroid in some way stimulates the growth of fibroids, then it would seem that more than 40 per cent of cases should show fibroids among this series where thyrotoxicosis is so marked. We found, however, only two cases in which the presence of fibroids of the uterus had been revealed by vaginal examination, abdominal palpation, or history of fibroid disease, or of previous operation for fibroids. Neither of these cases had large fibroid uteri. This would speak rather strongly for the view that the thyroid has little influence on the growth of uterine fibroids. It should be admitted that these hundred cases were on the surgical services and that careful vaginal examinations were not done in every case. However, we are safe in saying that very few obvious fibroids were overlooked.

FIBROID COMPLICATED BY THYROTOXICOSIS

Whether or not we admit that the thyroid can influence the development of fibroids of the

uterus, or that uterine fibroids can directly or indirectly affect the activity of the thyroid gland, the fact that uterine fibroids and thyrotoxicosis can and do exist in the same patient at the same time is obvious. When this combination exists it is of the highest importance that it be recognized and that the degree of the two conditions be estimated and properly evaluated when outlining treatment. To this end we believe that each patient presenting herself to the gynecologist with the signs and symptoms of fibroids should be carefully examined as well for evidences of thyroid hyperfunction. This examination may well include a basal metabolic rate if the symptoms such as goiter, tremor, increased blood pressure, diarrhea, weight loss, and nervousness are sufficiently suggestive. When well-marked clinical and laboratory evidence of thyroid disease is present, we believe the gynecologic complaint should, if possible, be treated palliatively until after the medical and surgical treatment of the thyroid has been carried out. In the presence of serious complications of fibroids, such as acute infection, twisting of the pedicle of a subserous fibroid, intestinal obstruction, acute hemorrhage into the fibroid or severe anemia from menorrhagia or metrorrhagia, it may be necessary to treat the fibroid and its complication regardless of the thyroid. Under these circumstances only such operative procedures should be carried out as are necessary to relieve the acute conditions, and further intervention postponed until the thyrotoxicosis has been brought under control. After the patient has recovered from the thyroid imbalance the fibroid may be treated by radium, x-ray, or removal, as the exigencies of the case dictate. In patients with an exophthalmic type of goiter it will be found that a period of bed rest, with Lugol's solution, ten drops three times a day for about two weeks, may help decidedly to reduce the danger of a thyroid crisis following a hysterectomy. Lugol's solution may be of benefit in certain cases of toxic adenoma, but its use here must be more guarded. If a crisis occurs, however, morphin, ice bag over the thyroid, and bromids should be used to combat the condition. The operation for fibroids should be done under combined local and ethylene anesthesia when the latter is available, and this combined with large incisions to avoid unnecessary traumatic shock. No secondary operative procedures, such as cervical repair, perineorrhaphy, or appendectomy, should be undertaken at the same time. Adrenalin should not be given as a stimulant in case of shock since it is said to augment the reaction rather than combat it in thyrotoxicosis. Spinal anesthesia and local are not so desirable because of the associated use of adrenalin in the form of ephedrin, and also because of the physical reaction of the patients. Crile¹⁴ has recently pointed out the danger of adrenalin injections in patients with hyperthyroidism, and feels

that thyroid crisis can be precipitated by stimulation of the adrenal or injection of adrenalin.

CONCLUSIONS

From a consideration of these results it would seem that the following conclusions are justifiable:

1. In a thousand women with fibroids of the uterus there was no evidence that goiter was caused by the fibroids.
2. Fibroids complicated by adnexal pathology and degenerative changes were not associated with a higher incidence of thyroid disease than other cases.
3. The basal metabolic rate in a series of thirty-five cases, while higher than normal in the majority of cases, was not sufficiently so to be of special significance.
4. In a series of one hundred thyrotoxic patients there was no evidence of an abnormal incidence of fibroids as judged by the symptoms, vaginal findings, and history of operation for fibroids. Only two per cent of these cases had demonstrable fibroids.
5. Fibroids and hyperthyroidism may occur in the same individual. The treatment of the thyroid should always precede that of the fibroid unless the latter is an emergency, such as twisted, infected, necrotic, or severely bleeding fibroid, and if emergency operation is necessary, adrenalin as a stimulant for shock should be avoided.
6. Rest, Lugol's solution, and lobectomy may be necessary before attempting the necessary gynecological operation.
7. Palliative management of the fibroid by radium, x-ray, ergot, and pituitrin, with blood transfusion in suitable cases, often gives good results while the thyrotoxicosis is being brought under control.
8. All patients with fibroids giving suggestive history or symptoms of thyroid disease should have a careful examination, including basal metabolic rate, to determine the presence and degree of thyrotoxicosis.

University of Illinois, College of Medicine.

REFERENCES

1. Kleinwachter, quoted by Von Graff and J. Novak. *Arch. f. Gyn.* 1914. Vol. 31, p. 446.
2. Freund: *Handbuch*, Von Grafe. 1877. S. 97.
3. Freund, H. W.: *Deutsch, Zeit. f. Cheiur* 1890-91. Vol. 31, p. 446.
4. Von Graff and Novak, J.: *Arch. f. Gyn.* 1914. Vol. 102, p. 18.
5. Leahy: Personal communication.
6. Seed: *Ibid.*
7. Percy: *Ibid.*
8. Marine, D.: *Amer. Jour. Obs.*, lxxvi, 680, 1917.
9. Thompson, W. H.: *Amer. Jour. Obs. and Gyn.*, ii, 621, 1921.
10. Hill, H. G.: *Quarterly Jour. Med. Lond.*, p. 217, January 1929.
11. Bandler, S. Willis: *Amer. Jour. Obs.*, lxxvi, 644, 1917.
12. Hertzler: *Amer. Jour. of Surgery*, xxxvii, 274.
13. Plummer: *J. A. M. A.*, August 30, 1913.
14. Crile: *J. A. M. A.*, March 1929.

MENINGOCOCCUS INFECTION—ITS TREATMENT*.

REPORT OF CASES

By EDWARD B. SHAW, M. D.

AND

H. E. THELANDER, M. D.

San Francisco

DISCUSSION by *George D. Lyman, M. D., San Francisco; Alfred H. Washburn, M. D., San Francisco; Donald K. Woods, M. D., San Diego.*

THE treatment of meningococcus infection is a subject of timely interest because of the increased incidence and severity of cerebrospinal fever in California and throughout the United States during the last few months.

It is not the purpose of this paper to present a series of cases or a statistical résumé. The following three cases, however, so well epitomize the nature of epidemic cases that they are quoted as a text for a discussion of treatment. The three all occurred in one family and were admitted to the hospital within a period of forty-eight hours.

REPORT OF CASES

CASE 1.—The first, a boy of nine years, was taken ill January 9, 1929, the day previous to admission, with pain in the neck, pain in the legs, and earache. He was said to have no fever until the day of entry, when he was found to have a slight rise in temperature, vomited once, and had a generalized eruption. He was brought to San Francisco and seen by Dr. M. L. Cohn, who referred him to the Children's Hospital service for treatment. He did not seem desperately ill, was perfectly conscious and cooperated well. His temperature was 99.8 rectally, his head was markedly retracted, neck and back rigid, Kernig bilaterally positive, and Babinsky positive on the left. Thickly distributed over the extremities, chest and abdomen were pale pinkish spots as large as one centimeter in diameter, some of them with a hemorrhagic center. Intermingled with these spots were many hemorrhagic spots. Lumbar puncture done at 1:30 p. m., showed cloudy fluid. Thirty cubic centimeters was withdrawn and twenty-five cubic centimeters of antimeningococcic serum was introduced. The fluid showed intra- and extracellular Gram-negative diplococci, and meningococci were later recovered on culture. Two hours after spinal treatment, thirty cubic centimeters of serum with an equal quantity of 10 per cent glucose was given slowly intravenously, without any reaction. That night a second lumbar puncture was done. It was possible to withdraw thirty-five cubic centimeters of fluid and twenty-eight cubic centimeters of serum were introduced. Next morning the spots were all fading. Thirty cubic centimeters of serum were given intraspinally morning and evening. By this time cultures of the spinal fluid organisms were tested by agglutination against all of the available commercial serums; the best one agglutinated only in a reaction of 1 to 10, and this was used for further treatment. The following day, the third, forty cubic centimeters of serum were given intraspinally morning and evening. Although his opisthotonos was increased, he remained rational and

* From the Department of Communicable Diseases of the Children's Hospital and the University of California Medical School, San Francisco.

* Read before the Pediatrics Section of the California Medical Association at the Fifty-Eighth Annual Session, May 6-9, 1929.

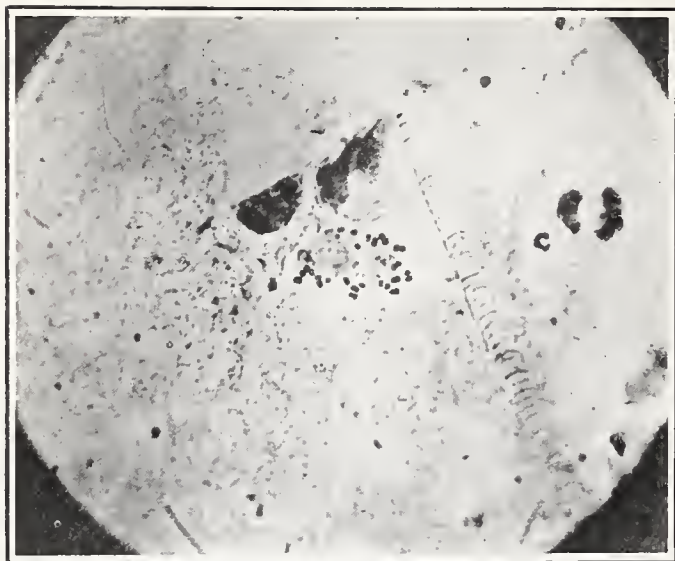


Fig. 1.—Meningococci in stained blood films from venous blood. Note variation in size, characteristic of meningococci.

seemed generally improved. Smears from the spinal fluid were negative for meningococci. Next day his improvement continued except for an extreme degree of neck rigidity, so great that lumbar puncture could not be performed. It was felt safe to delay further treatment and he thereafter promptly improved, his neck stiffness gradually subsided and his further convalescence was complicated only by moderate serum sickness and a throat culture persistently positive for meningococci. He was dismissed on the twenty-third day after admission.

CASE 2.—A brother of this child was admitted the same day. This year-old boy had been ill, supposedly of influenza, for three days. He had been feverish and a number of pinkish spots on his back and neck had been noticed. After his brother's illness had been recognized, he was sent into the hospital for treatment. The day before entry he had a slightly stiff neck and a droop of one eyelid was apparent. This child was very ill. His temperature was 103 rectally, he was listless and apathetic, there was marked ptosis of the right eyelid, his neck and spine were very stiff, and Kernig and Babinsky signs were bilaterally positive. Several hemorrhagic spots were present over his abdomen and lower extremities. Lumbar puncture was done promptly and thirty cubic centimeters of turbid spinal fluid withdrawn, twenty-eight cubic centimeters of serum being introduced. Next day thirty cubic centimeters of serum was given intraspinal morning and evening, and on the third day of treatment thirty cubic centimeters of serum was given in the morning and forty cubic centimeters at night. Next day, the fourth of treatment, no spinal fluid could be withdrawn by lumbar puncture, due either to block or a local edema, and that night thirty cubic centimeters was obtained from the cistern and twenty-eight cubic centimeters of serum was administered by this route. Next day, the fifth of treatment, twenty-one cubic centimeters was given by cistern. Fluid from the cistern still contained a few organisms in the smear; even so, no serum was given on the sixth day. On the seventh day forty-five cubic centimeters of serum was administered by lumbar puncture. Spinal fluid withdrawn at this time revealed no organisms either on smear or culture. He subsequently received no treatment, but for ten days remained almost stuporous. His temperature dropped only to rise with the onset of serum sickness, then he began to rally slowly and on the twenty-seventh day was dismissed perfectly well and mentally normal.

This boy received no intravenous serum, but was given a total of 266 cubic centimeters into his spine and cistern.

CASE 3.—The third was the most interesting of these cases. This boy of seven had been exposed to his two brothers until they were admitted to the hospital, but remained well until two days after their admission, when he was brought to the city on a visit. In the morning he was perfectly well, but about noon vomited several times, developed an elevation of temperature and early in the afternoon was observed to have a rash. He was admitted to the hospital late that afternoon, was acutely ill, flushed and sick looking, but perfectly conscious and rational. There were no neurological signs except a faintly positive Kernig and increased tendon reflexes. He had no neck sign. Covering his abdomen were many small petechiae almost exactly simulating flea bites. These were very numerous and during a short interval after admission new ones appeared. On the legs were many pale pink and fawn-colored spots as large as one-half centimeter in diameter. This boy was given a small desensitizing dose of serum intracutaneously and subcutaneously, and forty minutes later, there being no reaction, was given fifty cubic centimeters of serum and fifty cubic centimeters of 10 per cent dextrose intravenously, using the serum most potent against his brother's strain of organism. An urticarial reaction promptly developed, but was controlled by the administration of adrenalin. One hour later, despite the absence of signs of meningeal involvement, lumbar puncture was done. The spinal fluid was perfectly clear, contained twenty-one cells per centimeter, and organisms were not found on smear or culture. A blood culture taken before the serum was administered was positive for meningococci. Throat culture was also positive. Next morning his temperature was 102.2 rectally. He was given thirty cubic centimeters of serum and thirty cubic centimeters of dextrose solution intravenously without any reaction. His temperature rapidly dropped to normal and from the following day onward remained so. No subsequent lumbar puncture and no additional treatment of any kind was done.

PREDOMINANT FEATURES

These three cases illustrate two striking epidemic features of the disease, namely, increased communicability and the predominance of symptoms of generalized systemic invasion. Herrick has definitely shown that meningococcic infection starts first in the throat; this is followed by a second stage of dissemination by way of the blood stream and a final stage of localization, usually in the meninges, but occasionally in the joints or elsewhere. All of these three cases had meningococci in their throats.

Like the stage of throat invasion, the stage of dissemination may pass unnoticed, may be prolonged over days or weeks of low-grade sepsis, or may give the picture of fulminating septicemia presented by the last of these cases. It should be particularly stressed that the presence of a hemorrhagic rash should always make one suspicious of meningococcus disease and the association of meningeal symptoms with such a rash should point convincingly to the meningococcus as the etiological agent. The blood of these septicemic cases contains the organisms in tremendous concentration and can often be found on direct examination of the blood smear. An example of this is shown in Fig. 1. These blood smears are

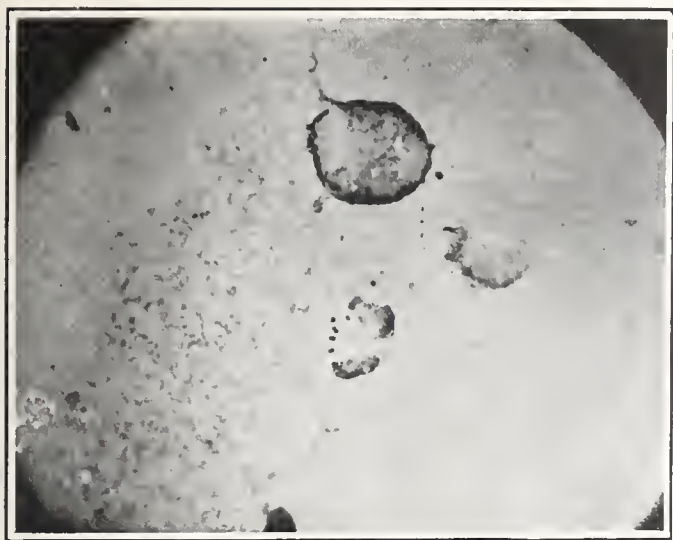


Fig. 2.—Meningococci in stained smears from venous blood. Note both intra- and extracellular diplococci.

from a child of two years who had been perfectly well the morning of entry, developed a fever and rash in the late afternoon and was admitted to the hospital at 10 p. m. moribund, covered from head to foot with an intense hemorrhagic eruption varying from small flea bite sized petechiae to large ecchymoses. Despite a large dose of serum intravenously he died about an hour after admission. Direct blood smears taken from venous blood showed many meningococci both intracellularly and extracellularly. These cases of "spotted fever" type must be suspected clinically and treated by the administration intravenously of large doses (30 to 100 cubic centimeters) of antimeningococcic serum without waiting for confirmation of the diagnosis. It is of possible value to test for skin hypersensitiveness and desensitize the patient previously if necessary. The mixture of dextrose solution with serum serves to minimize protein reaction. Some observers administer serum intraspinally to these cases as well as intravenously, but if actual invasion of the meninges has not occurred when the condition is recognized and large doses can be given into the blood stream, the organisms can often unquestionably be eradicated before they localize. In these septicemic cases, since lumbar puncture may favor the localization of such an organism—elective for the meninges—it is our feeling that lumbar puncture is better deferred until the blood is saturated with antiserum.

TREATMENT

Most cases of early meningitis, such as the first of these cases, represent a late stage of the septicemia. These should be treated intraspinally, but it is an advantage also to treat them intravenously following the first intraspinal treatment in order to eradicate the organism from the blood. Intravenous treatment often serves to improve the general condition of these cases spectacularly, and whereas they are left with a meningitis still to be treated, rapid clearing up of the blood stream infection renders them much less toxic.

Cases of late outspoken meningitis usually have no great need for intravenous treatment. In the

treatment of cases intraspinally, special emphasis should be placed on the first treatment. In the presence of signs justifying a lumbar puncture a cloudy spinal fluid is diagnostic enough to cause one to proceed with treatment without waiting for laboratory confirmation. As much of the infected spinal fluid is withdrawn as the patient's condition will justify, gauging this by his general condition, pulse, respiration, and, in adults, by the blood pressure. As soon as the fluid has been withdrawn and its turbidity recognized, a slightly less amount of antiserum should be introduced. It is a tremendous advantage to give a large dose, particularly in this initial injection. Little difference need be made in doses for small children or adults since children stand the serum well and the infection badly. Small doses should never be used. Serum should be given slowly and should be warmed to body temperature.

Spinal fluid secured from the first puncture is the most likely to give a growth of organisms and should be quickly transported to the laboratory so that a growth may be secured. As soon as possible suspension of the meningococci should be tested by agglutination against several available antisera so that the most highly specific serum may be used for further treatment. Herrick states that a good specific serum should agglutinate the patient's strain in a dilution of 1 to 200 or more, but we seldom encounter strains which our serum will agglutinate in such dilution. There is very little question but that eastern observers have worked with more specific serum, and the explanation for this is possibly that strains in California are imported from the Orient and so are atypical and commercial serum prepared from eastern strains is not highly potent against them. If this is true the obvious suggestion is that western laboratories should be encouraged to produce antimeningococcic serum potent against the strains that we encounter locally, atypical strains being constantly added to insure continued potency. The difference which is frequently encountered in serums probably does not indicate that one serum is poor and another good, but that their specificity varies in regard to certain strains. Until the most specific serum has been determined in the laboratory, any standard commercial product may be used and changed to another one if clinical improvement does not occur.

Intraspinal treatments should be repeated at intervals of eight and then twelve hours for two, three or four days; with improvement in the general condition, they may be done then every twenty-four hours. After the first two or three intraspinal treatments the blood stream is kept saturated by the serum which is poured into it by way of the spinal fluid and there is very little necessity for repeated intravenous treatments, one or two of them usually sufficing. It is often difficult to decide when to stop treatment; intraspinal serum causes a persistence, often an increase, of meningeal signs, fever, and spinal fluid pleocytosis. For this reason it is unwise to at-

tempt to continue treatment until there is improvement in all of the signs of inflammation, although overtreatment is greatly to be preferred to undertreatment. Serum should be administered until a fairly large amount (150 to 200 cubic centimeters) has been given and then should be most cautiously withheld, particularly in the cases in which rare diplococci can still be found. In all cases several lumbar punctures should be done after the serum is withheld and treatment finally stopped only when organisms are absent from several successive specimens. During the course of active treatment, if block or other difficulty makes it impossible to give serum intraspinally, prompt recourse should be had to the intracisternal or intraventricular route of administration.

CONCLUSIONS

1. Purpuric manifestations are highly significant in early diagnosis of meningococcus infections.
2. It is important to recognize cases of cerebrospinal fever early and to treat them intensively.
3. Proper laboratory observations are highly essential to treatment.

384 Post Street.

DISCUSSION

GEORGE D. LYMAN, M. D., AND A. D. SINCLAIR, M. D. (384 Post Street, San Francisco).—Doctors Shaw and Thelander have presented us with something that few, if any, of us have seen—that being three cases of meningococcus meningitis in one family. Few families are unlucky enough to even have two members affected. The excellent results obtained in the treatment of these three cases are evidence of the very efficient manner in which they were taken care of. We can recall only one family in which two members had meningococcus meningitis at the same time—a child of three years and an infant of eleven months. These two cases were interesting in that they both had pneumonia along with the meningitis. Both cases terminated fatally.

In contrast to the method of treatment used by Doctors Shaw and Thelander it might be interesting to note the treatment used by the pediatric department of the Bellevue Hospital, New York City, during 1928, when they had an exceptionally heavy year of meningococcus meningitis.

1. No intravenous therapy was used, even in those cases which arrived at the septicemic stage and before the spinal fluid became cloudy. This was because of several very severe anaphylactic reactions having occurred early in the year—one or two deaths resulting—with the resulting decision that the bad results offset the advantages. However, some members of the staff felt that it was going too far to stop all intravenous serum treatment.

2. Intraspinal treatments were done only once daily, and every time more fluid was withdrawn than the amount of serum injected and never more than twenty cubic centimeters of serum was given at one time. A second tap and treatment in twenty-four hours was done only in case of emergency when very high fever, severe headache, or severe vomiting indicated its necessity. The reasons for this routine were that more frequent tapping and administration of serum were not found necessary to successful treatment and that it was felt that in addition to the antibacterial action of the serum there were substances formed in the spinal fluid which played their part in the successful treatment and that a too early removal of

this fluid deprived the body of the formation and use of these substances.

3. When lumbar tap was not successful, cistern puncture and ventricular puncture were resorted to.

Undoubtedly a great many would consider the above quite radical, but the results obtained from injection at these sites were no doubt just as successful as elsewhere in the treatment of the disease.

In treating infants with meningococcus meningitis some authorities have advocated the use of the intraventricular route entirely. This is because the serum gets directly to the choroid plexus, which is now considered to be the primary site of infection in the central nervous system. It has the other advantage of the ease by which this can be done.

The use of agglutination tests to determine the serum of choice is being widely used. However, it is claimed by some to be unreliable and for this reason has been discontinued by these authorities. In addition to the above not every hospital or doctor would be in a position to use this method because of equipment and supply of serum.

Overtreatment of these cases with serum is a very important feature in prolonging the patient's illness, as the serum is very irritating to the meninges. Undoubtedly most cases are to a more or less extent overtreated, but, as stated by Doctors Shaw and Thelander, it is better to err on that side.

The third case is undoubtedly a most interesting case. The result obtained by the two intravenous treatments is almost unbelievable. The one question we would ask regarding this case is, "Could it not possibly have been an abortive type of the disease where localization did not take place?"

✽

ALFRED H. WASHBURN, M. D. (University of California Hospital, San Francisco).—Our recent epidemic of meningococcus meningitis has brought home to many of us the need for a more widespread appreciation of the factors involved in early diagnosis and adequate treatment of this disease. In their paper on "The Treatment of Meningococcus Infection," Doctors Shaw and Thelander have presented these factors with admirable clarity. Their experience at the Children's Hospital is so much more extensive than mine that I shall limit my discussion to a few points which seem to me worth emphasizing.

The importance of the rash as evidence of a meningococcus septicemia has been pointed out by many authors, but I have not seen in print, previously, the statement that the organisms "can often be found on direct examination of the blood smears." After observing this same thing on three cases I have become convinced of its value as a diagnostic aid. It gives almost immediate evidence of a blood stream infection with a technique so simple that it requires only a routine blood smear. (They are easily demonstrable with Wright's stain taking the same purple color as the nuclei of the leukocytes.)

Another diagnostic point of importance is the technique of obtaining cultures from the spinal fluid. The authors state that it "should be quickly transported to the laboratory." A small degree of cooling will frequently inhibit the growth of meningococci. For this reason the surest method is to have warmed culture media ready at the time of the lumbar puncture, allowing the spinal fluid to drop directly into it. If this is not possible the spinal fluid should be kept at body temperature until cultured. Sometimes, as in one of our recent cases at the University of California Hospital, the organisms grow rapidly in the incubated spinal fluid itself.

In regard to treatment there is often a controversy between those who favor strenuous measures and those who are more conservative. The regimen recommended by Doctor Shaw and Doctor Thelander is practically identical with that which is used on our children's service at the University of California Hospital, and the results have seemed to justify its con-

tinuance. But whether or not one agrees entirely with this whole regimen two points deserve special emphasis. When one is doing a spinal puncture on a patient suspected of having meningitis, one should always have antimeningococcus serum at hand and give it at once in case the spinal fluid is cloudy, without waiting for bacteriological examination of the fluid. Furthermore, I believe the advisability of removing as much fluid as can safely be taken out so as to inject a relatively large amount of serum at the first puncture, is wisely stressed. The value of intravenous injection of serum can hardly be questioned in those cases which are seen early, with evidence of a septicemia. That it may be indicated occasionally even later in the disease is well illustrated by a recent report (Cabot Case 15292, *New England Journal of Medicine*, 201:139, July 18, 1929).

✱

DONALD K. WOODS, M. D. (Fifth and Laurel Streets, San Diego).—The paper by Doctor Shaw and Doctor Thelander seems to emphasize, without definitely stating, the necessity of early hospitalization of all cases suspected of meningococcus infection. The definite diagnosis and proper treatment of these cases in the home is almost impossible.

I feel also that their findings in regard to the persistence of positive throat cultures show the need for a widespread culturing of all contacts with every case.

We are often more interested in the acute case and forget, at the time and afterward, the excellent opportunity to prevent the development of new cases.

A combination of intravenous and intraspinal administrations of the serum, with the indications for each method, are very clearly outlined in this article. I feel that we have far more to fear from the progress of the meningitis than from anaphylaxis. Also I believe that, as suggested in this article, partial desensitization at least may be developed by small intracutaneous and subcutaneous doses thirty to forty minutes previous to the intravenous dose.

The experience of Doctor Shaw and Doctor Thelander has covered many more cases than the average man will see in his practice. Their conclusions are clearly stated, and the management they have outlined is rational and applicable to any case being handled as it should be in a properly equipped hospital.

As it seems to be generally understood that meningococcus infection enters by way of the nose and throat, I feel that I should again emphasize the need of a more careful checking with throat cultures of all convalescent meningitis cases and of all contacts, including nurses, physicians, and attendants.

✱

DOCTOR SHAW (Closing).—This discussion has brought out many important points for which we wish to thank those who have participated.

Intravenous serum is objected to by those who fear anaphylaxis, but this is, practically, a very rare occurrence and may be guarded against by careful skin testing. The patient who is really hypersensitive to serum will react to intraspinal treatment although perhaps not so violently as to intravenous. Most of the reactions are nonspecific and may be largely avoided by the slow administration of warmed serum diluted with glucose solution. Furthermore, despite the element of danger in intravenous treatment, its utility, particularly in those cases of fulminant septicemia, is so great that it is hard to justify complete abandonment of it.

Many of the New York clinicians are using a concentrated antimeningococcus serum. It should be strongly emphasized that this cannot be used intravenously with safety as it is now prepared and marketed. This particular agent is used in much smaller doses intraspinally, but it is questionable if this is a great advantage since it seems rational to withdraw as much of the infected spinal fluid as is easily pos-

sible and to reintroduce a quantity of serum which will fairly well flood the infected areas.

The use of amounts of serum which must fill the subdural space of the cord and flow through the cistern and into the ventricles obviates the necessity of intraventricular treatments unless block supervenes. The appearance of the cortex, at the autopsy table, at the site of repeated ventricular punctures would not lead one to do this procedure for any reason except necessity.

Clinical results do not always parallel agglutination tests of the serum against the patient's organism, but this is at present the best test for specificity that can be made in the laboratory.

As Doctor Lyman and Doctor Sinclair state, it is better to overtreat than to undertreat, but it is all too common to see cases treated by inadequate doses of serum over too long a time. May we again stress the importance of treating early, frequently, with large dosage, and not unduly prolonging the period of treatment.

Cases of manifest septicemia are seldom to be classed as abortive; on the contrary they are usually extremely fulminant.

Doctor Washburn refers to the value of cultures taken directly from the needle. It might be pointed out that a valuable routine, particularly when a first puncture is done in the home, consists in allowing the spinal fluid to drop directly into a tube of Loeffler's media (an ordinary throat culture tube) which has been warmed to body temperature.

Throat cultures are effective in detecting carriers, but during epidemics there are a great many of these and it is as yet an unsettled question what should be done with them.*

A REVIEW OF OVER THREE HUNDRED CASES OF CANCER OF THE RECTUM

By W. H. KIGER, M. D.

Los Angeles

DISCUSSION by James F. Percy, M.D., Los Angeles; Dudley Smith, M.D., San Francisco.

THERE has been a very considerable change during the past twenty-five years in the operation for removal of rectal cancer. First we had the operation performed by Allingham, of splitting up the rectum. The operative field always became septic, convalescence was slow and tedious, results as regard continence were poor, and generally there was a recurrence in a few months. Next we had the Kraske operation, where an incision was made over the rectum, posteriorly, and part of the sacrum was removed, a section of the rectum containing the growth was taken out, the ends were joined together. This operation was only applicable to a few cases and the results were not always satisfactory. Extensive sloughing often occurred; the mortality was high, and the functional results as a rule were poor. The abdominoperineal operation marked the first great advance in the surgery of rectal cancer, and was a decided improvement on anything that had gone before. It made possible the fulfillment of two important factors which were lacking in the other operations; that is, the free and complete removal of the growth and surrounding tissue and glands, and the possible elimination of sepsis. Another method of operation which has proved satisfac-

* McCoy, G. W.: *Public Health Reports*, 44:1595-1599, July 5, 1929.

TABLE 1.—*Report of Twenty-Five Cases of Carcinoma of the Rectum Which Were Diagnosed Early*

Sex	Age	Treatment	Date	Results
Male	45	Resection	1906	Recurrence 1928, living
Female	40	Cautery resection	1912	Good in 1928
Female	50	Cautery resection	1914	Living
Female	61	Cautery	1918	Recurrence 1925, died
Male	40	Resection	1919	Living
Female	38	Cautery	1921	Living
Female	69	Cautery	1922	Died of other cause 1926
Male	34	Cautery	1923	Living
Male	47	Cautery	1923	Living
Female	30	Colostomy and resection	1923	Living
Male	78	Resection	1924	Died of other cause 1928
Female	63	Resection	1925	Living
Male	70	Cautery	1925	Living
Male	66	Cautery	1926	Living
Male	60	Cautery	1926	Living
Male	40	Cautery	1926	Living
Female	38	Cautery	1926	Living, recurrence 1929
Female	22	Cautery	1926	Living
Male	38	Colostomy and resection	1926	Living
Male	42	Colostomy	1926	Died of other cause 1929
Male	72	Colostomy and resection	1927	Living
Male	62	Cautery	1927	Living
Female	23	Cautery	1928	Living
Female	62	Colostomy and resection	1927	Living
Female	35	Cautery	1928	Living

tory in the hands of the writer, for treating cancer of the rectum where the growth is situated very low in the bowel involving the anal outlet or just above, is removal by the actual cautery. The cautery designed and used by Dr. James F. Percy has been the most satisfactory for this work. The percentage of cures (three years and over) has been greater in this class of cases than with any other method.

But with all the improvements in operation and technique, including treatment by radium and x-ray, which has undoubtedly advanced the cure of this dread disease in other parts of the body, the results are still very far from satisfactory. One of the chief reasons for this unsatisfactory condition is that before the surgeon is consulted the disease is so far advanced in a vast majority of the cases that it is a "forlorn hope" from the start.

EARLY DIAGNOSIS IMPORTANT

My reason for writing this paper is to make a plea, in the interest of the patient, for diagnosis at a time when the probability of cure is greatest, and to urge the doctor to educate his clientele to the importance of a thorough and complete examination of the rectum, when blood in the stool, or an increasing infrequency of the bowel movements with change in character occurs. The early symptoms of cancer of the rectum are often so mild that they are not considered of any impor-

tance by either the patient or his doctor. What would appear to be the most important predisposing cause of cancer of the rectum, aside from age, is the presence of simple adenomata in the bowel. In several of the cases in this series there was direct evidence that the cancerous growth had developed upon a simple adenoma which had been present for a number of years. I have not the slightest doubt that many of the more advanced cases would have shown this origin had they been seen early enough. Simple adenoma is undoubtedly a precancerous condition and should be dealt with accordingly.

This group of considerably over three hundred cases was seen by the writer in private practice and at his rectal clinic at the Los Angeles General Hospital over a period of twenty years. Prior to 1920 the records of the county hospital are in such form that the number of admissions, operations, follow-up and other exact data are impossible to obtain.

The great majority of cases that come into an institution of this character are late cases and so far advanced that any treatment has but little chance of cure. In private work are seen a different class of patients, those who are often more intelligent, and who appreciate the importance of early symptoms. But even with this advantage the number of patients who have consulted their family physician for indefinite pains in the rec-

tum, constipation, and blood in the stools, and have been treated for months for hemorrhoids, by suppositories, dieting, dilators, and in various other ways without even having had a digital examination of the rectum, is astounding and shows a decided lack of appreciation of the importance of these symptoms on the part of the medical profession. I wish to make a plea also, on saving of time and expense for the patient. A patient who presents himself, complaining of blood in the stool, is frequently put to the trouble, expense and inconvenience of a complete gastrointestinal study before a rectal or proctoscopic examination is made. We know that in at least 90 per cent of the patients with blood in the stools that the blood is coming from some point within the lower eight inches of the bowel. If a proctoscopic examination is, therefore, done first, it will clear the situation and save time and expense for the patient.

To prove my contention that an early diagnosis and treatment is one of the most important factors in the cure of cancer of the rectum, I have selected twenty-five cases where the diagnosis was made very early. In several of these cases the growths were not larger than a twenty-five cent piece. We have been able to get fairly accurate data on these cases.

Two cases are reported in this series because both patients were under twenty-three years of age; one had a rectal polyp which had been prolapsing at stool for seven years previous. It ceased to appear a couple of months before being seen by the writer, and when removed proved to be an adenocarcinoma. The other was a case of multiple polyposis. A large polypus at the anal canal margin, which had been traumatized by the passage of fecal matter at stool, had become cancerous. Another case, which was undoubtedly a degenerated adenoma, had a recurrence of the adenoma at a site of the original growth after five years. This new growth was removed and was not malignant. Another case had a resection of upper rectum and part of sigmoid, with permanent colostomy, twenty-two years before. In this case there was another cancer of a different variety in the stump of rectum that was not removed.

As stated before, my sole object in writing this paper is to impress on the medical profession the importance of a careful and thorough examination of the rectum in all cases, regardless of age, where blood in the stool or an increasing constipation with changes in the character of stool occurs. If routine examination is made, many cases of adenoma which must be considered as potential cancers will be found by the examining physician before the malignancy has started, the best time in which to cure a clinically precancerous lesion.

1930 Wilshire Boulevard.

DISCUSSION

JAMES F. PERCY, M. D. (1030 South Alvarado Street, Los Angeles).—In 1913, while a guest of the Southern California Medical Association, I demonstrated my cautery technique in the treatment of uterine

carcinoma at the Los Angeles General Hospital. Doctor Kiger attended those clinics. He reasoned that if the cautery was of value in cervical carcinoma it might also be made worth while in the treatment of rectal cancer.* The doctor's paper is based on his subsequent experience in the treatment of cancer of the lower bowel, and although he has not given in his paper all the data available in his records, I am sure his statement that "the percentage of cures (three years and over) has been greater in this class of cases than with any other method" is easily subject of proof.

In his paper he gives no clue as to his technique in employing the cautery in malignancies in this situation. He makes use, however, of two procedures, and their choice in a given patient depends on the extent of the disease in the lower bowel. If the mass is limited to one side and "not larger than a silver twenty-five cent piece," he inserts a water-cooled rectal speculum, open on one side, which he has devised, and thoroughly destroys the malignant tissues by the application of my ball-tipped cautery. The speculum perfectly protects the healthy portion of the bowel. This technique is especially useful "when the growth is situated very low in the bowel, involving the anal outlet, or just above."

Where the disease is more extensive but not too high to be reached from below, Doctor Kiger has devised a cautery excision of the lower bowel that has much to commend it. The technique is briefly as follows: Incise the sphincter and obliquely on one side and then laterally on that side as far outward as may be necessary to give the widest exposure possible to the pathology to be removed. Sever the bowel circumferentially two inches from the inner margin of the sphincter if the growth does not involve this area. If it does, or if the sphincter is included in the malignant process, it should be removed in toto. After the bowel is severed with the cautery, the proximal end is gathered and closed in a holding forceps which can be made to serve as a tractor while the cautery knife separates all suspicious areas surrounding the bowel from the normal structures in the pelvis. In this manner the sigmoid can be loosened up to or even through the peritoneal fold and brought down to almost any extent desired, the disease removed with the cautery and the proximal end fastened to the two-inch margin of the bowel left inside the sphincter or, if this has been removed, to the sphincter itself.

Hemorrhage is often profuse and severe. It can best be controlled by a sponge pack dripping with boiling water, which stops the capillary oozing so the larger vessels can be easily seen and grasped with an artery snap and ligated.

A possibly unfavorable factor in this method is that it permits of no exploration of the upper abdomen for metastases. However, if the sphincter is not a part of the malignant process, metastases outside of the pelvis, as a rule, occur late.

✽

DUDLEY SMITH, M. D. (909 Hyde Street, San Francisco).—It cannot be too often reiterated that malignant growths in the rectum are all too frequently overlooked until too far advanced to be cured by even the most radical procedure. A large proportion of these could be discovered by a simple digital examination early enough to be operated upon with good chance of cure. I am glad that Doctor Kiger has again called attention to this fact and that he urges routine proctoscopic examination and again points out the futility of barium enema and x-ray examination to discover early lesions in the rectum. The x-ray will show the lesion only when far advanced

* The Percy Method of Treating Cancer of the Uterus Applied to Treatment of Cancer of the Rectum, W. H. Kiger, M.D., F.A.C.S., Transactions American Proctologic Society, St. Louis, Missouri, May 22-26, 1922.

and when practically all operable conditions will have been overlooked. It is particularly important to discover small polyps which have begun to show malignant change, for many of them can be removed with the cautery and the condition cured, saving the patient the loss of the rectum, which would be inevitable if not discovered very early.

There has been, in the past, much difference of opinion as to type of operation which should be performed for cancer of the rectum. There is, today, no difference of opinion as to the necessity of a permanent colostomy. Most surgeons now believe that the abdominoperineal resection of the sigmoid and rectum offers the best chance of cure. A few still maintain that a posterior resection following a preliminary colostomy is the better procedure because of a lower primary mortality. However, the technique of the abdominoperineal resection of the sigmoid and rectum in two stages has been so improved that, with the use of spinal anesthesia, the primary mortality has been reduced so that it is comparable with that of the posterior resection. Ernest Miles of London has shown that unless the three zones of spread (the upward, the lateral, and the downward) are completely removed, recurrence will be much more frequent. The posterior resection does not remove the upward zone of spread. The abdominoperineal resection does with practically the same primary mortality. The abdominoperineal resection should be done unless there are special conditions which preclude it in the individual case. Without question the posterior excision in either operation should be done with the cautery.

EPIDEMIC CEREBROSPINAL MENINGITIS*

A REPORT OF SEVENTY-ONE CASES, WITH OBSERVATION OF CERTAIN PHASES OF THE RECENT UTAH EPIDEMIC

By BARNET E. BONAR, M. D.
Salt Lake City, Utah

DURING the course of an epidemic, one obtains certain impressions which, because of lack of proper perspective, are frequently erroneous. Correct deductions regarding disease can only be made by careful study of case histories, tabulation, and comparison with other series of cases.

TIME PERIOD COVERED

This is a brief report of a series of cases of epidemic cerebrospinal meningitis treated by a few members of the staff of the Salt Lake General Hospital during the years 1927, 1928, and the first three months of 1929. During this period epidemic meningitis has been increasingly prevalent in Salt Lake City, as can be seen in Table 1, which also gives the number and per cent of the total number of cases in the city treated in this hospital. From this chart it will be seen that in the first three months of 1929 there have been considerably over twice as many cases as there were in 1928, and over six times as many as in 1927. The increase to epidemic proportions coincided

* From the Contagious Department of the Salt Lake General Hospital.
* Read before the Salt Lake County Medical Society, April 8, 1929.

TABLE 1.—Meningitis in Salt Lake City

Year	No. Cases	Cases in General Hospital	Per Cent
1927.....	17	8	47%
1928.....	44	22	50%
1929*.....	104	41	39%
Total	165	71	45%

* First three months.

with the reports coming from New York, Arizona, Iowa, Oklahoma, Alabama, Georgia, and Arkansas. Of the total number of cases occurring in the city, 45 per cent were treated in this hospital, whereas the remaining number of cases were scattered among the other physicians of this locality. It is easily seen from this that, save for the four or five physicians handling the disease at this hospital, any individual physician will see very few cases of meningitis indeed in the course of a number of years. This same condition maintains in practically any part of this country. Little wonder can be displayed, therefore, if the mortality rate for a hospital like the Salt Lake General Hospital, or other similar hospitals where there is constant experience in treating such cases, is appreciably lower than that of other hospitals where only an occasional case is seen, except during epidemics. In the former institution an organization is perfected and maintained for handling the disease, and therefore it is prepared at all times for an epidemic. This is a most important point, for meningitis is a disease which requires, above all, early, expeditious, well organized and systematized nursing and medical care.

MORTALITY FIGURES

Table 2 gives the mortality rate by the year. These compare very favorably with those in the report of the New York City Board of Health. The mortality figures of a hospital of this type are often lower, for the patients are often sent in for hospitalization later in the course of the disease than in other institutions. The fact that thirteen deaths of the total of forty-four occurred within twenty-four hours after admissions bears out this viewpoint. Omission of such deaths would give a corrected mortality per cent of 29.5. As a sidelight, it is interesting to note that in New York City, where so much of the serum used is that prepared by the City Board of Health (a serum considered by most authorities as more potent than the commercial products) the mortality rate was higher than that of this hospital, where the commercial sera were used.

TABLE 2.—Percentage Mortality of Meningitis

Year	Salt Lake General Hospital	New York City
1927.....	62.5%	67.8%
1928.....	35.4%	47.0%
1929.....	53.6%*	55.5%†
Total	47.8%	56.7%

* First three months.
† First two months.

TABLE 3.—Day of Death After Admission				
Death Day	Year 1927	Year 1928	Year 1929*	Total
1	3	2	8	13
2	0	1	4	5
3	1	2	2	5
4	0	0	2	2
5	1	0	3	4
6	0	0	1	1
7	0	0	1	1
8	0	1	0	1
14	0	0	1	1
16	0	1	0	1
Total	5	7	22	34

* First three months.

Regarding the day of death after admission (Table 3) it is seen that the greater number of patients died during the first twenty-four hours after admission to the hospital. In general there is a gradual drop up to the beginning of the sixth day, when a very pronounced decrease in the mortality occurs. One can assume, therefore, that the prognosis is directly proportionate to the number of days lived; and that if a patient survive five days he stands a very good chance of recovering.

The duration of the illness before admission to the hospital is shown in Table 4. The figures there given show clearly what is known only too well, that the earlier the admission the better the prognosis. Those admitted in the first two days of illness fared the best. However, even with early admission and with diagnoses made at a time when the spinal fluid changes are slight, one cannot be too sanguine as to the final outcome. This table also shows that in 1929 patients were admitted much earlier in the course of the disease. This was due undoubtedly to the presence of the disease in epidemic form, with the result that physicians were on the lookout for the condition and the lay citizens were sufficiently alarmed to request early medical attention.

AGE OF INCIDENCE

Certain findings are of interest in respect to the age of incidence. In New York City, prior to 1927¹ the disease predominated in the one to ten age group, with the ten to twenty age group a poor second. In our series, while the disease was most common in children under ten years of age, it was only slightly so, and incidence in the ten to twenty age group was correspondingly increased. In the epidemic this was strikingly noticeable, apparently affecting the high school patients more than any group. The most reasonable explanation for this is that children of this age are thrown into closer contact with one another, as at basketball games, dances, and other social gatherings,

TABLE 4.—Duration of Illness Before Admission			
Days Duration	No. Cases	No. Deaths	Percentage Deaths
1	16	5	31%
2	12	4	33%
3	11	5	45%
4	4	3	75%
5	1	1	100%
6	1	1	100%
7	1	1	100%
8	—	—	—
9	—	—	—
10	1	1	100%

TABLE 5.—Age Incidence		
Age Period	Salt Lake General Hosp. 1927-1929	New York City Prior to 1926
1-10	45%	72%
10-20	38%	15%
20-30	11%	08%
Above 30	05%	04%

than is the case with the younger children. The grammar school age was strikingly free from the disease, although the schools remained open. This only goes to substantiate the viewpoint that closing of schools is unnecessary and probably a folly, for if this is done the children will not have the close supervision of the teacher and school nurse, but instead will be more likely to expose themselves to uncontrolled gatherings and thus disseminate the organisms more thoroughly throughout the city. Prohibition of athletic contests, or at least audiences for such competitions, and keeping children from dances, theaters, and church gatherings will do more to combat the epidemic than closing the schools.

The average stay in the hospital of cured patients was eighteen days. The majority of the patients were ready for discharge on the fourteenth day, that is, by the time quarantine was up, positive throat cultures alone necessitating their residence in the hospital. In a few cases complicating infections or chronicity of the disease lengthened the duration of stay in the hospital.

SYMPTOMS

Mention will be made of only certain symptoms which seem to be of interest. Vomiting was not a very common symptom after admission to the hospital, although it was rather frequent before entrance. Herpes, and usually severe herpes of the face and lips, were exceedingly common, much more so than usually mentioned in textbooks. Petechiae were found in the majority of cases in 1929, and served to indicate the unusual virulence of the organism. Headache was present in practically all patients, as were the usual signs of meningeal irritation.

The temperature curves were generally of the intermittent type, and showed one peculiarity of which little mention has been made. About the third day after entrance most of the patients showed a drop of temperature, with a subsequent rise on the next day or the one following this. Whether this secondary rise in temperature indicated a reaction to serum or was a manifestation of bacterial recrudescence may be, perhaps, a matter worth discussing. In our opinion it was merely an indication that, while the serum given had temporarily overcome most of the infection, the bacteria again had gained the upper hand. The chief interest in this had to do with the treatment. Serotherapy should not be discontinued when the defervescence occurs at so early a stage. Undoubtedly this is the point at which most of the mistakes in treatment are made. Serotherapy should be continued, in spite of the drop, until one is satisfied that the temperature will remain

down, or until other indications for stopping treatment are present. A continued fever, especially if high, is of grave importance. When lower it may indicate the chronic form of the disease, or the presence of some other infection such as arthritis, otitis, adenitis, or pyelitis. About the seventh day an elevation of temperature frequently appears. This is probably a delayed anaphylactic reaction, usually associated with urticaria. While a high temperature speaks for a poor prognosis, such is not always the case, especially if there is a definite drop on the second or third day. The lowest temperature recorded was in a patient whose fever was never over 99.4 Fahrenheit, and the highest was 109 Fahrenheit, just before death.

COMPLICATIONS AND SEQUELAE

Thirty-seven patients recovered, and in this number urticaria was practically universal. Thirty per cent exhibited one or more other complications. Two patients were totally deaf on discharge, while four had impaired hearing, bilateral or unilateral. Panophthalmitis, unilateral, occurred in two patients, defective vision in one, and strabismus in one. Cervical adenitis was manifest in two patients. In one patient there was nearly total paralysis of the right arm. Arthritis and iritis were seen in one patient. One of the patients who was totally deaf on discharge regained part of his hearing. One patient who has been listed with the totally deaf is now complaining of ringing in the ears, signifying peripheral stimulation. It remains to be seen whether some hearing will return. Our experiences serve to corroborate the findings of Neal² and her co-workers that sequelae, especially the paralytic type, are much less common than ordinarily supposed.

Acute anaphylaxis occurred three times following intravenous administration of a highly concentrated serum. In two of the patients death was ascribed to anaphylactic shock. This reaction did not occur with intravenous administration of less concentrated sera.

PROGNOSIS

With serum treatment the mortality is ordinarily said to be 30 per cent. Neal, Jackson, and Appelbaum² report 23 per cent in 654 cases. In the hands of most observers, including ourselves, the mortality is approximately 50 per cent. Petechiae indicate a severe infection of the septicemic type.

As mentioned before, a high temperature usually, if prolonged, offers a grave prognosis, but conversely a low temperature does not give a universally good prognosis. The element of most prognostic value obtained from the temperature curve is the defervescence shortly after admission. If the secondary rise, which usually follows, is low and of short duration, the patient will probably recover.

A rapid thready pulse indicates a serious infection. The respiration rate, to our viewpoint,

seemed to be of more prognostic value than the pulse. A rapid rate or a sudden rise, indicating medullar pressure, are grave signs. Indications of intracranial pressure, rapid respirations, slow, bounding pulse, with later rapid thready irregular pulse, together with signs of marked increase of spinal fluid pressure or spinal block always offer a poor prognosis.

The spinal fluid is of some value in arriving at a conclusion as to the outcome of the disease. Thick fluids containing fibrin flakes indicate a severe infection. Excessive spinal fluid pressure is another grave sign, and when no fluid is obtained one can assume a basilar form, which is extremely fatal. A dry cisterna tap is of similar significance. Bloody fluids of nontraumatic origin indicate a severe infection.

We have observed a finding, hitherto apparently unrecorded, which seems to be of considerable prognostic value. Increasing rigidity of the neck or opisthotonos, especially when associated with a definite drop in temperature, is a favorable sign. One would ordinarily assume this to be a serious omen, but apparently this finding is not to be considered as due to an increase of the infection, but is rather a manifestation of increased meningeal irritation set up by the antimeningococcic serum.

TREATMENT

Treatment should be well systematized if best results are to be obtained. The disease requires constant nursing and medical attention, and poor results are inevitable if treatments are given irregularly and without a definite plan of procedure; or if nearly constant attention is not given the patient, especially after administration of serum. It is not uncommon for a patient to go into collapse shortly after administration of serum. Such attacks are not to be confused with anaphylaxis, although occasionally such an occurrence is experienced. They appear to be true manifestations of collapse and usually occur in those patients who resist treatment rather violently. In many instances prompt injection of epinephrin together with the use of artificial respiration and oxygen were life-saving procedures.

The spinal fluid is removed slowly until the pressure is normal and serum equal in amount to the fluid withdrawn is injected. In some instances this amounted to 60 cubic centimeters, although the average was 30 cubic centimeters. Depending upon the severity of the case, these injections were repeated at eight or twelve-hour intervals. For the severe cases three treatments were given the first twenty-four hours, twelve for the next two, or possibly three days, and one daily until there was a definite change for the better symptomatically and the fluid became clearer. Serum was then given every other day until the spinal fluid showed no spinal organisms. The average number of punctures was eight. Therapeutic punctures were occasionally done later for relief of pressure symptoms such as headache. In some

instances where a dry tap was obtained, serum could be gravitated into the spinal canal.

Intravenous administration of serum was used only for the severe septicemic forms, and then it was given only during the first twenty-four or thirty-six hours. Intramuscular injection of serum was given occasionally in the earlier cases, but was abandoned later. In a few instances babies were given serum intraperitoneally.

Cisterna puncture was reserved for those severe cases exhibiting spinal block or those desperately ill patients who showed signs of respiratory involvement. No hesitation was felt about giving serum very slowly by this route because of the gravity of the case. Only one patient died immediately following this procedure. This death was in a practically moribund child who had had two previous cisterna punctures. The last puncture resulted in a dry tap, indicating massive blocking of the base by exudate. Cisterna puncture, if used cautiously in selected cases, will save a few of the more serious cases. No ventricular punctures were done. In one instance this was indicated as shown at necropsy, for the walls of the lateral ventricles were covered with a thick greenish fibrinopurulent exudate.

Termination of serum treatment depends upon the general condition of the patient, the temperature curve, and the condition of the spinal fluid. General improvement with persistence of a temperature drop, and removal of clear or nearly clear fluid free from organisms, are indications for stopping treatment. However, as has been explained previously, one should not stop treatment in the first two or three days because of amelioration of symptoms and clearing of fluid until satisfied that there will be no secondary rise in temperature. Ordinarily if the temperature remains down for two days in the face of definite improvement, one may feel justified that it will continue to do so. If the head becomes more retracted under such circumstances, no alarm need be felt. Such a finding seems to indicate successful treatment. It is imperative to have a hypodermic syringe of epinephrin at hand when giving serum for use in case of collapse or anaphylaxis. The amount of serum naturally varies with the severity of the disease, and the course of the disease. In this series of cases the number of punctures ranged between six and ten, with an average of between 150 and 250 cubic centimeters of serum injected. It may be thought that our use of serum was extravagant, but we felt that in the presence of an unusually severe form of the disease it was better to err on the side of overadministration of serum.

Supportive treatment consisted primarily of stimulation when necessary, and of administration of nourishment. The nutrition must be kept up by whatever means necessary, although in our experience tube feeding was extremely in-

frequent. Save for the unconscious, the appetites of the patients were surprisingly good.

Because of the practically universal occurrence of urticaria, beginning usually on the fifth or sixth day, it has become our policy to give ephedrin sulphate in good-sized doses beginning with the third day. Epinephrin by hypodermic was also given when necessary.

SPECIAL PROBLEMS

Certain difficulties were encountered from time to time which tested the ingenuity of the medical attendant considerably. During the hysteria of the epidemic two patients were given serum, although the only signs of meningitis present were headache, fever, and a very questionable Kernig, with the spinal fluid normal. Following admission to the hospital the meningeal symptoms were more pronounced and the spinal fluid cloudy—irritation symptoms subsequent to serum administration. In both instances intuitiveness or experience led us to doubt the diagnosis and, aided by the failure to obtain organisms in the fluid, we correctly refused further treatment.

In cases with definite meningeal symptoms, even if the fluid is clear, such as might be found in the meningismus of a pneumonia, one is justified in the presence of an epidemic in using serum if in doubt. One such patient was given two injections of serum until the diagnosis of pneumonia was definite and the course indicated no meningitis.

Patients exhibiting symptoms of meningitis, with cloudy spinal fluid, should be given serum even though no organism is discovered, and serum treatment should be continued until recovery occurs or the diagnosis of another type of meningitis is made. One patient not included in this series showed such findings, with a spinal fluid cell count of 1710, with marked predominance of lymphocytes. The symptoms and findings were those of a mild meningitis. Tuberculosis meningitis, luetic meningitis, and a meningitic form of poliomyelitis could not be diagnosed. The patient was continued on serum treatment and is now cured and awaiting discharge, with normal spinal fluid findings. Jervell's test is negative, indicating no meningeal irritation at this time.

There is one disease which is little considered in the differential diagnosis of meningitis, but which has clouded the diagnosis three times in our experience. This is mumps. Fever, stiffness of the neck, with pain and tenderness on motion, before appreciable swelling of the parotid gland, together with a very suggestive Kernig in a hypertonic child, led us to consider a possible meningitis. In one instance spinal puncture was delayed only because of a suspicious fullness of the neck. It is interesting to note recently that both Fabian³ and Taillens⁴ have described menin-

geal symptoms in mumps. Perhaps in these instances we were dealing with this condition.

SUMMARY

Meningitis is an acute illness usually of less than two weeks' duration, with a mortality of approximately 50 per cent, rather than of 30 per cent, as ordinarily given. The age incidence in the series of cases reported showed that the disease predominated in those under ten, but to a much less extent than has been reported in other epidemics. The group from ten to twenty years showed a corresponding increase. The mode of transmission, that is, by close contact, as occurring at dances and athletic contests, makes the high school age unusually susceptible. Prohibition of such activities is much more essential than closing the schools during an epidemic. Those patients who receive treatment early in the course of the disease stand a much better chance of recovery, and those who survive five days of treatment are very likely to recover. Sequelae are not so frequent as heretofore has been thought, and paralyses are unusually infrequent. The prognosis was favorable if the symptoms subsided early, the temperature dropped and continued to remain down, and the turbidity of the cerebrospinal fluid decreased. Unfavorable signs were continued high fever, continued or progressively cloudy fluid, and signs of increased intracranial pressure or spinal block. Increased retraction of the head in the presence of subsiding symptoms was a favorable sign. Epidemic meningitis requires well organized, systematic and constant nursing and medical attention, and should be handled by institutions regularly equipped to give this service. Administration of serum into the spine is the method of choice in most cases, although in certain severe cases with spinal block and other signs of basilar involvement cisterna puncture is indicated. The method of treatment in this series of cases was midway between the conservative and radical methods. Treatment should not be stopped with subsidence of symptoms and drop in temperature unless the latter remains down for at least two days, as it has been observed in this series of cases that there regularly appears a temporary defervescence with quick elevation of temperature and increase of symptoms. All cases with definite signs of meningitis should be treated as epidemic cerebrospinal meningitis until proven otherwise.

CONCLUSIONS

1. A series of seventy-one cases of epidemic cerebrospinal meningitis occurring in the Salt Lake General Hospital is reported.
2. The statistics of this series compare favorably with those from other parts of the country.
3. Sequelae are much less common than is ordinarily supposed.
4. Systematic treatment with constant nursing and medical attention in hospitals equipped for this service should be required.
5. Certain apparently unrecorded observations

are explained and certain problems of diagnosis are discussed.

718 Boston Building.

REFERENCES

1. Bulletin City of New York Department of Health, May 26, 1928; February 2, 1929; March 6, 1929.
2. Neal, Jackson, and Appelbaum: Epidemic Meningitis, J. A. M. A., 1926, 87, 1992.
3. Fabian, L.: Monatschr. f. Kinderh., 1928, 38:210.
4. Taillens, J.: Rev. Méd. de la Suisse Rom., 1928, 48:420 (Apr. 25).

FRACTURE OF THE PELVIS*

By M. C. HARDING, M. D.

San Diego

DISCUSSION by Philip Stephens, M.D., Los Angeles; H. W. Spiers, M.D., Los Angeles.

THIS study of pelvic fractures includes fifty-seven cases from my own practice and sixty-nine cases from the practice of other San Diego men who have kindly given me access to their hospital records. I wish to acknowledge the work of Dr. Louis Strahlman and Dr. Frazer McPherson, who have been associated with me in the orthopedic service at the San Diego County General Hospital.

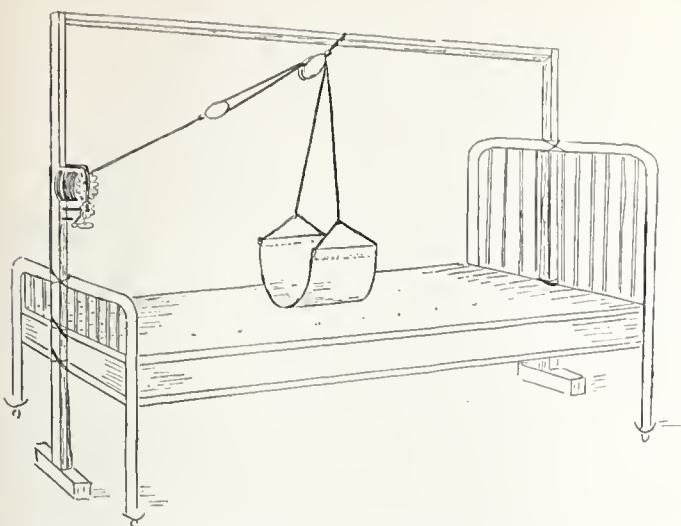
A classification along anatomical lines is the simplest, as it at once gives the clue for proper treatment.

1. Fracture of the wing of the ilium.
2. Fracture of the sacrum not involving the sacro-iliac joint.
3. Fractures of the rim of the acetabulum associated with dislocation of the hip.
4. Central fractures of acetabulum with inward displacement of the femur.
5. Fracture of an isolated ramus of the pubis or ischium.
6. Fractures involving complete loss of continuity of the pelvic girdle, ranging from fractures of both rami on one side to the most complicated mixtures of fractures of the anterior ring with sacro-iliac separation or break.

This last is the type with which this paper will deal, since it constitutes both the most numerous and most serious of the injuries to the pelvis.

Of these 127 cases, eighty-seven were of this multiple type, and forty were distributed among the other types mentioned. Seventeen were fractures of the ilium. Fourteen were fractures of one ramus. Four were fractures of the acetabulum with backward dislocation of the hip. Three were central fractures of the acetabulum with inward dislocation of the hip. Two were central acetabular breaks without dislocation. One report did not note the location. Ten died, or a mortality of 8 per cent. There were five

* Read before the Industrial Medicine and Surgery Section of the California Medical Association at the Fifty-eighth Annual Session, May 6-9, 1929.



Sling for fractured pelvis. Canvas strip 10 x 36 inches, slung by $\frac{1}{4}$ -inch gas pipes through which ropes are threaded. Ropes lead through double block and around single equalizing block, which assures even support and easy rolling of patient. The patient is raised by the windlass only to point of greatest comfort—never off the bed.

ruptured bladders of which three died, and one ruptured urethra which recovered.

With exception of one or two articles, the literature on the subject is quite unsatisfactory. This applies especially to pathology and treatment. My desire is to discuss the mechanics and pathology which experience has shown to be most important, and to emphasize a method of treatment which is not so widely used as it should be.

A complete break in the pelvic ring is caused only by great force, so it is but natural that visceral rupture, shock, and great hemorrhage should be expected companions of this lesion. As stated, there were five torn bladders, of which three died. Bladder rupture is of the first importance, and must at once be recognized or eliminated. Catheterize if uncertain, and if abundant clear urine is obtained you can forget the bladder. If bloody urine passes, be suspicious; but wait and repeat. Many bladders bleed from the mucous membrane, or the blood may be coming from a damaged kidney. No urine present at the second catheterization probably means a ruptured bladder, and must be so treated until proved otherwise. This paper will not deal with the repair of a torn bladder or torn urethra further than to say that the help of a skilled urologic surgeon is invaluable.

It is my experience that the bladder is injured only where there has been a squeeze. The sharp wrenching shock of an auto collision, which is by far the commonest accident, does not often cause visceral rupture. I cite one case where a woman was pinned uninjured on the floor of a car, but had her pelvis fractured and bladder ruptured by a man standing on her while he was trying to open the door.

Shock is due to the general severity of the injury rather than to the pelvic fracture alone. All of the fatal cases had other injuries. There is always a large hemorrhage, due to the vascularity of the pelvic bones and to the looseness of the

tissue about them which allows the blood to escape without being compressed.

When the pelvic ring is broken in front and the patient is placed on his back the pelvis tends to spread and rock outward. This is due to the weight of the thighs dropping backward. The resisting point is then shifted to the sacro-iliac joints, as the only place susceptible to strain. The very frequent combination of pubic and ischial fractures on one side with gross separation of the sacro-iliac joint on the same side, or the equally common bilateral rami fractures with one-sided sacro-iliac separation, proves that the force released by breaking the ring in front is spent behind on the sacro-iliac. This conception has a most important bearing on treatment and prognosis.

An analysis of end results has shown conclusively that disability falls into two standard types. There is pain in the groin near the adductor attachments, or there is low back pain. The first is accounted for by the pull of muscle upon new callus. The second by strain upon torn or stretched sacro-iliac attachments. It will follow from this that a proper treatment should provide a maximum of comfort with a maximum of reduction of all displaced or injured structures. This, I believe, can best be done by the sling illustrated. Of course I am speaking only of the complete break of the pelvic girdle. Fractures of less magnitude need no restraint of any kind—only rest in bed.

The standard methods advised by textbooks are (1) a swathe, (2) plaster spica, (3) Bradford frame, (4) Thomas splint, (5) a sling. The swathe is difficult to keep in place. It presses too hard on the wings of the ilium, drawing the fragments too far inward, and, if the sacro-iliac is loose will tend to displace it also. It is not comfortable in severe cases.

The spica has nothing to recommend it. If tight, the pressure is on the iliac wings. If loose, it does little good. It has to be cut so high in the back for cleanliness it does not support.

The Bradform frame has even less to recommend it. It is bad enough to let an unsupported fractured pelvis lie in a bed which at least yields a little and nestles up under the trochanters, but why perch the sacrum on an unyielding narrow frame which will allow the thighs to roll out and back without hindrance?

Thomas splints are merely absurd.

The sling sounds formidable, but is really very simple—anyone can make it, and anyone can learn to adjust it. The one we use is a canvas strip ten by thirty-six inches, slung by two pieces of one-fourth inch gas pipe through which is threaded a rope to attach it to the pulley on the overhead bar. Reference to the illustration will show the pulley and windlass arrangement. Its advantages are: (1) comfort. I have never seen a patient who could not be made entirely comfortable in it. (2) It is efficient. It accomplishes the purpose of solidly closing the sacro-iliac

joint or posterior fracture at all times by its graduated pressure applied to the curve of the body—greatest at the middle of the back and lessening to a slight pressure at the anterior superior spines. (3) It gently presses the pubis together. The pressure in front can be accurately controlled by a spreader between the rods of the sling. (4) It is clean and easily changed. (5) It aids in handling a heavy or weak patient. (6) Suprapubic or perineal drainage is not interfered with. (7) Traction can be applied on a leg where one-half of the pelvis rides up. (8) It has proved a good support for a combined lumbar spine fracture.

A few points in adjustment may be of use: Do not swing the patient up completely off the mattress. Let him decide his most comfortable height. This will always be with about half his weight on the bed. Most cases do not want a spreader. The sling is attached to the windlass through a free-running equalizing block so the patient may be rolled slightly to either side without displacement. This adds greatly to his comfort.

Five weeks in the sling is the average time. The patient is then fitted with a sacro-iliac belt with perineal straps, if a man; or with a belt sewed outside a corset if a woman. After one week more in bed he is allowed up. Walking is not permitted unless it is painless. Crutches are not used. Sixty-seven of the eighty-seven multiple fractures were treated in the sling. In my experience the comparison in comfort and results is all in its favor.

Aside from the cases of bladder rupture, which required surgery, there was one bone graft of the sacro-iliac, one open reduction of pubic rami, and one drainage operation. In women patients considerable adjustment of fragments can be made per vaginam. Every effort should be made to prevent dystocia through encroachment on the pelvic passage. If one side is high attempt to bring it down by traction on the leg aided by pressure on the iliac crest, rocking it slightly forward and back to disengage. If in a woman, check the pubis position through the vagina. It is very hard to correct a vertical shift and they tend to recur, so a Buck's extension should be on at the time of reduction with at least twenty pounds of weight. There is no need to push the anterior superior spines together. They will shift slightly in the sling. It is needless to say that these manipulations should be done with the patient in his bed and his sling already arranged.

In conclusion I wish to stress two points: (1) The important injury is the sacro-iliac separation or stretching. (2) The most efficient, comfortable and satisfactory treatment is by the use of a sling which is at least as adjustable as the one presented.

700 Electric Building.

DISCUSSION

PHILIP STEPHENS, M. D. (1136 West Sixth Street, Los Angeles).—We have been greatly interested in Doctor Harding's paper. There are few procedures

which have any direct bearing upon the convalescence of these patients suffering from fractures of the pelvis. What we have in the way of treatment and immobilization is rather cumbersome, unwieldy and not particularly comfortable to a class of patients who must undergo long periods of treatment. The great majority of these are all rather difficult to adjust or change.

We have, for a number of years, used the Bradford frame in conjunction with more or less fixed slings. We were rather of the opinion that this method has been looked upon as more or less standard. With Doctor Harding's sling (which he not only describes, but has shown a practical demonstration of), we think that a marked advance has been made in the treatment of fractures, and also that the comfort of patients will be greatly augmented. The simplicity, the fact that it is easily obtainable, the ease which by an ingenious arrangement allows it to adjust itself to the patient, the various changes which can be quickly and conveniently made, altogether make it an ideal equipment for the treatment of this class of injuries.

We will, without hesitation, adopt its use and feel grateful to Doctor Harding for his study along this line, which has resulted in the development of so useful an apparatus.

✽

H. W. SPIERS, M. D. (614 Westlake Professional Building, Los Angeles).—Doctor Harding's paper is of great interest, and I feel it is timely. He brings out one point which I think, though well known, should be emphasized, that is, in general all pelvic fractures unite, consequently very little interest is taken by the average surgeon in their care. This lack of interest too often results in indifferent care with unnecessary suffering, complications, and disability.

His method of handling such fractures by the canvas sling and equalizing pulley block is new, and appeals to me as a very efficient one. A large number of such cases pass through the Los Angeles General Hospital. I have found that the plaster of Paris double spica cast carried to the knee on one side, and sometimes including the entire leg on the other side, has been a very satisfactory method of caring for them. A cast prevents the outward rotation of the thigh which Doctor Harding mentions. I have not had any particular trouble with pressure on the sacrum, and, too, when the cast is applied, it immediately relieves the average patient of pain. This is an important item. Such patients can be turned upon their faces, moved from place to place, and even taken to the sun porches with little difficulty and no discomfort. Of course bladder complications prevent the use of casts.

I was hoping Doctor Harding would discuss his method of handling the pelvic fractures in which the head of the femur is forced through the acetabulum. These are not frequent fractures, but are distressing complications in such injuries.

I wish to congratulate Doctor Harding in again demonstrating his ingenuity in developing new and practical methods. I shall take occasion to try Doctor Harding's sling.

✽

DOCTOR HARDING (Closing).—Replying to Doctor Spiers' question regarding treatment of central fractures of the acetabulum, I wish only to say that I was fortunate enough to extract the head from the pelvis by gentle manipulation and traction.

A moderate amount of extension was kept on for a few weeks and they made good recoveries.

I have nothing further to add, except to say that the sling method has become the standard treatment by all the men doing fracture surgery in San Diego.

MENTAL HYGIENE PROBLEMS, PSYCHIATRY AND THE GENERAL PRACTITIONER*

By GLENN MYERS, M. D.

Los Angeles

DISCUSSION by Nathaniel H. Brush, M.D., Santa Barbara; H. Douglas Eaton, M.D., Los Angeles; Robert Lewis Richards, M.D., San Francisco.

THIS paper is written to advance the opinion that practitioners of medicine, other than neuropsychiatrists, have repeated opportunity to prevent the development of mental disorders through proper recognition of them in their incipency, when they are simple mental hygiene problems in childhood. Much has been written on this subject, but repetition is obviously necessary to bring results.

Until late years, instruction in neuropsychiatry has been generally inadequate and medical students have grown into practitioners of medicine with but a vague concept of the subject. The anatomy and function of the central nervous system are complex and a comprehensive and practicable understanding of mental processes is not easy to attain. While there has been a tendency to relegate the treatment of fully developed mental disorders to specialists, there has been a woeful lack of recognition of mental danger signals in childhood and a consequent failure to refer children with potential abnormal mental trends to some experienced person for proper treatment. Thus psychoses develop that could have been prevented and, when the patient eventually comes to the specialist, the mental situation may then be such that beneficial results from treatment are difficult or impossible to attain. There has resulted the double tendency to regard mental disorders as nonunderstandable and noncurable. Such concepts are ill founded; certainly, however, psychoses are more easily prevented than cured.

The trained psychiatrist repeatedly sees avoidable psychotic outgrowths from mental trends that had their origin in early childhood. Probably there would still be psychotic upsets, were all children under the most expert supervision. The fact remains that childhood is the time when one can best influence mental trends and that an ounce of prevention in childhood is worth a pound of cure later.

Since one grasps the intricacies of the mind with one's own mind, perhaps, with all our knowledge, we lack complete understanding of the subject. Yet, on the whole, we have fair understanding and there is a fair possibility of moulding the impressionable, imitative child to fit well into the scheme of things.

DEVELOPMENT OF ANATOMICAL STRUCTURE

Suppose that, at one time on earth, there had been no animal life; that it first appeared in the form of a unicellular organism and that, in the course of a very great period of time, it grad-

ually became more complex. From a stage of unicellular organisms, multicellular organisms developed; then the execution of special functions by special groups of cells; then more and more such groups until animal life reached the stage in which we see it today. From the gastreae came the worms. From one branch of the worms came the fish. The fish in the course of millions of years became man. The evolution took place possibly by these stages: bacteria, gastreae, worms, fishes, amphibia, reptiles, marsupials, apes, manlike apes and man.

In studying anatomical structure, one sees evidence of stages in development. There are residuals of structure and function that had to do with adaptation to special environments in the past but which, through changes in environment, are no longer useful to animal economy and which, notwithstanding the lapse of very great periods of time, so slowly are they modified, have not yet completely disappeared. In other instances, all traces of structure and function have long since disappeared after their need had ended. One sees in the anatomical structure of the brain evidence of growth here, less marked development there, as need for special function increased, or was not required. Indeed, the only satisfactory method of gaining an understanding of the distorted, intricate tracts of the central nervous system is to study the various stages of evolutionary development. Various stages of development in the past are manifest in the embryo. It would be difficult to predict, from examination of the human embryo at certain stages, just what the matured growth would eventually be, fish or man. The embryo becomes a fish again, before it becomes man. Gill slits appear and the extremities are in the rounded form of fins. The embryo of the whale at one period shows the developmental stage of teeth which are, however, not present at birth or in extra-uterine life. Teeth were at one time in the past a part of the whale's needed equipment, while now the strong tongue and hard rubber palate suffice. We continue in process of anatomical and functional change: structure and function useful to us now may later be useless and gradually disappear.

EVOLUTION OF FUNCTION OF MIND

The function of the mind has gone through evolutionary change and shall so continue in the future. One has in the mind (in the function of the brain cells) still the influence of conditions of environment that have largely or altogether ceased to exist, as well as of environment that continues in the present. Mental adaptations that were a part of the reactions to the environment millions of years ago, are perhaps now no longer needed. Mental traits and trends that were at one time natural to the environment, are perhaps now not natural and may even be incompatible with the environment. Man, the gregarious animal, has fitted himself more and more into the herd, into a coöperative civilization, with the repression of certain traits and the development of others for the benefit of himself, and of

* Read before the Neuropsychiatry Section of the California Medical Association at the Fifty-eighth Annual Session, May 6-9, 1929.

civilization—the most advantageous situation for his safety, comfort and progress.

Civilization is a recent development compared to the great length of time that animal life has been in existence. Civilization is but a shell covering underlying traits and trends that hold over from ancestors of the remote past. It is still rather easily punctured, permitting primitive underlying trends to assert themselves—witness behavior in mobs and war. To understand the child, one must take into account the influence of environment in the past from the beginning of animal life. Trends that we inherit developed from the influence of environment in which our ancestors lived. Through environment certain trends have been strengthened and accentuated while others have been weakened and diminished. Mental reactions have been “conditioned” by environment. They were handed down to us without any choice of our own but dependent upon the experiences of our race and ancestral stock. From the beginning of animal life environment has had its influence in the evolution of the mind; it is so at present and will continue so in the future. The more we have needed certain traits, the stronger they have developed and the more pronouncedly we inherit them. A very great length of time is required to develop inheritable structures and functions and trends, and a very great length of time is required for them to cease to function and to disappear after we no longer need them. Obviously, we cannot know all about our development in the past and so, obviously, we cannot know all about what we actually inherit. Yet we can draw some conclusive theories and know some facts.

HEREDITY

We inherit especially the old fundamental characters of the species. The union of the best stock in marriage is naturally advisable, in order through the accentuation of advantageous trends to insure the best heredity to our children. Each generation, especially through the union of good stock, has had some more or less minute change in mental trends not existent in preceding generations. The extreme rapidity with which children learn could not be possible were external aids not reinforced by some inherited tendency of the brain. A child's learning is like the wakening of something previously known—like the revival of memory processes. That is, of course, particularly true when the child travels roads new to him but familiar to his ancestors. Particularly true is this in the case of special talent. The belief, however, that we fatalistically are limited in our abilities by the extent of the qualities that we inherit, without taking into account the influence of environment after we arrive in the world, is too pessimistic and narrow. Certainly inherited structure and function are not much modified during the brief span of our lives. Certainly also, we inherit a definite capacity for intelligence which appears not to be much modified during our lifetime. For this reason, perhaps the most important faculty that we can inherit is a good

capacity for intelligence. Yet, even with good intelligence, and with the inheritance of good fundamental traits from good stock, we may be poor citizens if our environment, especially during our childhood years, is not favorable. It is clear that environment in early childhood is extremely important in influencing to good or bad adaptation to civilization.

INFLUENCE OF ENVIRONMENT

Immediately upon our arrival in the world, or perhaps even before our arrival, we begin to be influenced by experiences that leave their mark as memories. (The possibility that factors in intra-uterine life produce some form of mental impression is not to be regarded as absurd when we consider the repetition of the same environmental influences in the intrauterine life of our ancestors for millions of years. Such impressions must, of course, be looked upon as essentially hereditary in character; and extrauterine influences upon the fetus, not previously experienced, should leave little if any lasting impression. It is conceivable, however, that such factors as the warmth of the mother's body, movements of the body, sounds, etc., should leave some actual memory impression. Certainly, soon after birth, such factors as hunger and satisfaction of hunger, pain and relief of pain, comfort and discomfort, bring out certain reactions in the child. Excluding the most important and fundamental trends of our race, those that become manifest with so little external stimulation, certain environmental influences are ordinarily regarded to be necessary to the establishment of memories. One must be conscious, as probably only the most extraordinary stimuli are at all recognized in a state of unconsciousness. One should not be too fatigued, as fatigue tends to lessen attention and comprehension. Previous experience and the habits of alertness, good attention, good concentration and good apprehension play their part in permitting an impression to so affect the brain cells and their functions that a memory remains. Lack of previous experience renders comprehension more difficult, as do also lack of attention, poor concentration and the habit of poor apprehension. The importance of the experience and resulting interest likewise play their part. But habit is to be looked upon as the keynote of adaptation. Anything repeated over and over a sufficient number of times tends to become a habit. Good habits and bad habits are formed through such repetition. Once a habit has been established, good or bad, it is not so readily overcome as is the influence of an unrepeatable experience. One thus forms habits of thought, of conduct, of reaction, of emotional feeling—physical habits and mental habits—biochemical-physiological habits—habits of attention, concentration, interest, alertness, apprehension, comprehension, retentiveness, quick conclusions, organized thought, judgment, or of their opposites. One may be habitually happy or depressed, optimistic or pessimistic, trustful or untrustful, confiding or unconfiding, sociable or unsociable, gregarious or solitary, cyclothymic or even in mood,

stupid or brilliant, quick or slow, witty or lacking in humor, etc., through habit. We must enter the world with certain hereditary habits or tendency to habits, but our personality—the expression of our ego, that which distinguishes an individual from other individuals, as well as those traits that conform with the uniform expression of the herd, of civilization—may be modified one way or the other through environment. While the experiences of our lifetime bring about such minute influence upon our germ plasm that we transmit to our offspring but little modification, at the same time our personality, our adaptations, are greatly modified by our environment and thus, after we have once arrived in the world, our environment becomes to us of utmost importance. We are especially fortunate if we have inherited a high capacity for intelligence, but if a low intelligence we may still, with proper environment, be good citizens. We are fortunate if we have inherited a good physique, organs with good function, a well balanced endocrine system. But if a poor physique, with good environment we may still make a good adaptation. If with inherited tendency to disease, with good environment we can perhaps overcome that tendency. If there has been insanity in our stock and we inherit a tendency to insanity, good environment may well bring about mental soundness and stability. And good environment means essentially whatever is good for our physical and mental health, such as good mental influences and the sort of attitude and direction by those with whom we come in contact that will bring about good habits.

MENTAL HYGIENE IN CHILDHOOD

A great deal has been written on the general subject of mental hygiene of childhood, but there continues to be rather generally a more or less imperfect understanding of the knowledge that is available. Oftentimes there is failure to put into practice what is known. There is the tendency, as long as one makes a relatively good adaptation, to give the possibility of better adaptation little thought. Probably no one carries on at full potentiality. The standards of our civilization are far below what should be a possible maximum; thus there is failure of incentive to better the standards. That fact is in general but imperfectly conceived, or if a fair concept is had, a practicable method of betterment does not readily present itself, or too much effort is required. When one takes into account the prevalence of a degree of intelligence defect sufficient to bring down the average to a strikingly low figure with resulting inhibition in understanding of things at all complex, the lack of broad vision of the state of affairs, the satisfaction with one's degree of adaptation and the lack of initiative to do better, it is not surprising that, of the comparatively few persons that have good comprehension of the situation, only a very exceptionally brilliant member of society propounds a workable scheme for betterment, the execution of which is then more or less impeded through the type of material to which it must apply. The assumption that all men are created

equal is not true, except as a matter of man-made law. In consequence, improvement upon our state of civilization is extremely slow.

Further, perhaps without exception, all adults have themselves mental trends that render them more or less blind to certain situations that are obvious to others. "Oh wad some power the giftie gie us, to see oursels as ithers see us." Probably no one has a mind that is completely well ordered. We conceive and comprehend with our mind. Our mind is the sum of what we brought into the world plus the impressions left upon us by our experiences from the time that we were born. Each experience has made a certain impression upon us, more or less enduring dependent upon the degree of receptivity of our minds at the time (degree of attention, interest, alertness, fatigue, intelligence, education, previous experience, etc.) into which usually enters the importance to us of the experience. Such impressions remain with us as memories of the experience. We retain memories consciously or in a state of recall if they are sufficiently important to us, or if they have repeated themselves, or if they are widely associated with other memories. All memories are associated together more or less, and obviously the memory of a certain experience will tend to be recalled as often as we are conscious of some associated memory. Other factors enter into the conscious retention of memories, such as the tendency to retain memories of pleasurable content. Inversely, we tend to forget something with painful content, or something unimportant, or something unrepeatable. Further, except for such mental qualities as we bring into the world with us, everything is new to us at the time of our birth. In childhood new experiences crowd into our life. With the exception of something very important to us, they are not readily retained by reason of their large number, the lack of previous experience, the immaturity and lack of good order of our minds and, especially related to the latter, the imperfect development of the habit of good concentration of attention and of retentive memory. Consequently, as adults, we retain but isolated memories of our childhood. Better retention of memory in adult life is dependent upon the habit of good concentration of attention, previous experiences with their associations, better discrimination and judgment bringing about selectiveness of memory, all evolving a habit of better retentive memory. Memories, whether of experiences in childhood or adult life, if not conscious are nevertheless not lost to us. They remain with us, as we can prove by recalling them through association or, even if we fail to recall them, we believe that they are nevertheless within our mind. Furthermore, all the experiences of our life have had more or less influence upon our personality—our manner of meeting our environment. The foundation of our personality then, other than inherited traits and trends, is laid in early childhood and upon that foundation we build, as years go by, our ideas, opinions, reactions and conduct. How important is this foundation! With some defect in it, we

must balance and perhaps repeatedly balance the superstructure.

We ordinarily do not appreciate this. Our ideas, opinions, reactions, conduct, seem to us, as a rule, altogether natural and logical. We ordinarily do not trace them to their original source in the foundation—inherited trends or childhood experiences that we have forgotten. On the contrary, we tend to rationalize them as having to do with perhaps quite unrelated experiences. One is surprised when he finds himself quite in error in certain of his concepts. All this is important to his ego—that which sets him apart as an individual, a personality apart from other personalities—an individual with opinions that satisfy him in his belief that they are right as they seem so natural, so spontaneous and so sensible. Yet he may be quite in error in his deductions and conclusions through faulty premise in childhood, the foundation upon which his conclusions were constructed. By reason of this satisfaction in the correctness of his logic, nearly everyone is ready to express an opinion about things with which he has had inadequate experience and, consequently, of which he cannot have adequate knowledge. Ask the average person his opinion, e. g., about conditions in Russia, and see how readily he gives it, perhaps evolved at the moment without previous thought, and based upon concepts that appear to him to be correct. Put the same question to someone who has had adequate experience and he will perhaps reply that the situation is complex and not readily elucidated. Ofttimes the most opinionated person is one who knows very little about his subject and yet who perhaps does not consciously try to appear well informed. The average person has so well formed an ego, that his opinion about any matter seems to him to be proper and, upon that premise, it would be a wound to his ego not to give his opinion. Much courage is required for one to say that he does not know.

It is difficult for adults to understand the mind of the child when they themselves are restrained from good understanding by reason of certain trends within themselves. Without insight into the fact, they regard themselves as mentally quite capable of proper understanding. The child feeds this tendency through obvious respect for the knowledge of the adult. In reaction to such attitude, the adult elaborates and rationalizes his concepts, often finding himself in deep water but not admitting he is beyond his depth in order to avoid showing the child that he is not all-understanding. Then, too, most adults do not make adequate effort as their ego tells them that, as adults, they should readily understand the mind of the child. They fail to realize that the mind of the child represents not only the memory accumulation of experiences since birth, but also the hereditary accumulation of millions of years. More often the child studies the adult with better success than the adult studies the child.

Were adults more understanding, fewer statements such as "I don't know what to do with Johnny; I never saw anything like him" would

be heard. Perhaps the traits in Johnny are but the reflection of similar traits in the adult; the child is an imitative animal and tends to copy his environment. One sees this clearly in the stereotyped imitation by a younger child of the traits of an older one. But one does not so readily realize that the burst of temper may be an imitation of the adult under some more or less similar situation. The fact that the child is like the parent in mental characteristics does not by any means necessarily point to the inheritance of the traits, as these may have been acquired through imitation.

At a very early age, the child has had experiences sufficient in number to form his reactions into habits and he shows certain foundations of personality that distinguish him as an individual. He has his own likes and dislikes, his particular reactions to his environment. These reactions, if allowed to repeat themselves over and over for a long period of time, tend to become more and more established as habits. At first they are easy to modify, to strengthen or overcome. The oftener they are repeated, the greater they grow in strength and the more difficult they are to overcome. Traits that later may be disadvantageous should be recognized as such and modified before they become an integral part of the mental make-up. One should not regard the child merely from the viewpoint of an adult, but should try to get his perspective. One should not look at him with the wrong end of the field glasses. Bad traits should be averted and good ones strengthened. The detail of procedure is to be found in extensive available literature. The child should be helped to develop so great an ability to get along with the world that no possible difficulties in life are sufficient to overcome his powers of adaptation. Thus may psychoses be prevented.

The usual concept of the psychoses as well defined disease entities renders understanding and treatment difficult. A psychosis should be regarded as the sum total of the reaction of the individual, in which heredity, environment and biochemical-physiological processes influence adaptation to the environment. The attempt to fit symptoms into this or that poorly defined disease entity tends to confusion and prevents accomplishment of the best that should be done for the patient. Understanding of mental hygiene problems is more simple and practicable before they become psychoses. Main trends of the personality and trends conflicting with the environment should be carefully studied in childhood by physicians and parents. The pediatrician and internist, the school teacher and social worker, have frequently opportunity to make such observation when parents have observed no occasion to call in the psychiatrist. Thus they have the opportunity to observe potential trends when these are, perhaps, remediable mental hygiene problems. More often than not, these problems have so gained in potentiality, by the time they come to the attention of the psychiatrist, that their modification is difficult or impossible. Early recognition is of the greatest importance in the

attack upon such problems while they are yet vulnerable. It is an important part of the great modern trend to preventive medicine.

1052 West Sixth Street.

DISCUSSION

NATHANIEL H. BRUSH, M. D. (103 East Micheltorcha Street, Santa Barbara).—The keynote of Doctor Myers' very excellent paper strikes me as existing in his statement that the school teacher watching the child's behavior in school has the greatest opportunity of observing the child closely at first hand.

Myers again brings out a very salient point in saying that the parent is often blind to defects which another and disinterested person, observing the child in an entirely impersonal way, could pick up.

A thorough training in mental hygiene should be part of the curriculum of every teacher, and this statement is certainly well borne out by the following experience, which is merely illustrative of countless experiences which neuro-psychiatrists have had in the past, and will have.

A few years ago a young child was brought to the neuropsychiatric clinic of Santa Barbara Cottage Hospital by the school nurse, who reported that the teacher had insisted that there was something wrong with the child, as far as its behavior went. The surprise of the examiner can easily be imagined when, on asking the child the simple question "How old are you, little girl?" because the child was dressed in girl's clothes, had long yellow curls and carried a doll—to receive the indignant reply: "I ain't a girl; I'm a boy." Further questioning brought out the following story from a rather sullen, indignant mother: Her only daughter had died a couple of years previously. Mourning the loss of the daughter, she resolved to rear her youngest son as a girl to take the place of the lost daughter; to this end, she dressed the boy in girl's clothes, endeavored to cultivate girlish traits, forced him to play with girls, and so forth. The mother was so insistent that she be allowed to rear this boy in her own way that only threats to turn the child over to the Juvenile Court sufficed to awaken her to the terrific mistake she was making. She finally acquiesced, and the child was seen two weeks later; this time he had short hair, and upon seeing the examiner, proudly displayed a pair of trousers with pockets in them. Here, the brightness and knowledge of mental hygiene existing in a school teacher saved at least one child from a rather disastrous future.

Another point which Doctor Myers emphasizes is the growing attention paid, in modern medical schools, to the importance of adequate and competent neuropsychiatric instruction, and in at least one medical school no student is eligible for a degree until he has satisfactorily made and completed a certain number of neuropsychiatric examinations upon patients actually observed and studied in the wards of the hospital connected with the school.

All in all, Doctor Myers' paper brings home to us very vividly the importance of the practitioner being able to recognize and assimilate the ever-present problems of mental hygiene and of some slight knowledge of neuropsychiatry.

⌘

H. DOUGLAS EATON, M. D. (1136 West Sixth Street, Los Angeles).—Doctor Myers is to be congratulated on his timely and comprehensive article emphasizing a most important subject. Interest in mental hygiene and fortunately in the mental hygiene of childhood has been steadily developing in the last few years as evidenced by the establishment of clinics for juvenile court cases, child guidance clinics for community service, habit-training clinics in connection with children's hospitals and mental hygiene clinics in schools and colleges as well as in industries. Further education of parents, teachers, pediatricians and general practitioners in mental hygiene will result in earlier and more satisfactory help to the child and consequently greater advantage to the community.

Inheritance is obviously of prime importance in mental hygiene. Those of us who are dealing with psychopathic problems are, I am confident, ready to agree with Plato and ask for a chance to start treatment with the parents long before the child is born. Whatever the inheritance may be, too much stress cannot, in my opinion, be laid on early environmental conditions, both physical and mental. The physical conditions are primarily in the realm of the pediatrician and are being progressively more competently handled. Mental environment conditions, especially personal contacts, the atmosphere created by adults who are themselves poorly adjusted, are frequent causes of maladjustment in children. Many cases have occurred in the writer's experience where the child's disorder could be traced directly and completely to sympathetic absorption from the parent. The child guidance clinic is fundamentally a parent guidance clinic. Fortunately we are making companions of our children to a much greater degree than in the past; a relationship which is, I believe, mutually profitable.

Psychiatrists are now less interested in names and classifications and much more in individual problems. Education along the lines Doctor Myers has so ably suggested will be of tremendous value, not only to the child, but to the parent, the teacher, the physician, and the mental health of the community.

⌘

ROBERT LEWIS RICHARDS, M. D. (384 Post Street, San Francisco).—Mental hygiene from the medical point of view is preventive psychiatry. Doctor Myers has very properly and pointedly reminded the general practitioner that his early efforts may prevent a great deal of the chronic mental illness that at present requires more beds and hospital space than all the physical ailments. The mental hygiene movement has speedily passed from the care of the final disabilities in state hospitals to the origin of these cases as manifested in the home, the school, the church, and the court.

Some main objectives in mental hygiene effort have promptly evidenced themselves:

1. It has always been true that factors of environment are largely modifiable factors, while factors of heredity are modifiable to a very limited degree. You can change the place where a man lives more easily than you can change him or his estimate of values. Eugenic efforts have borne very little fruit, even if they have caused many words and much writing. On the other hand a family attitude or even a national attitude can be radically changed in a comparatively short time (e. g., recent war reactions and changes caused by psychiatric social service nurses). Hence, while mental hygiene favors every effort toward better breeding and better origin of human beings it naturally has attacked first and most vigorously the environment factors in the home, the school, and the court. Consequently it is more interested now in what happens outside state hospitals than inside state hospitals. Mental hygiene is especially interested in the knowledge of preventive mental health facts in the medical profession since the physician has the widest and most human contact beside the parent. This means personality origin, growth, dangers and deformities, rather than final disabilities as manifested in psychoses.

Habits or patterns of reactions in the individual can be changed, while end disabilities are largely permanent. Fifty-some varieties of bad habits among 900 manifestations in 226 children under six years of age indicate a large preventive work being carried out as a state effort in Massachusetts, Pennsylvania and Iowa. Guidance clinics, from New York to Los Angeles, have been added to the usual out clinics, as the result of the study of juvenile delinquency started in 1922. Community chests and more efficient management of charitable organizations are calling for more and more mental hygiene effort.

2. Doctor Myers wisely directs especial attention also to the second main objective, viz., the early modifications of mental growth trends where greater changes are possible. The study of juvenile delin-

quency leads to back-grade pupils in the schools. The study of problem children in the schools leads directly to the family, and especially to the parents. In the family the trail leads back to childhood, and early behavioristic trends. To place the burden of these trends on heredity is untrue and has been proven false by the experiment of changing the environment and management of the child and finding speedy changes in the behavior of the child. Consequently all mental hygiene efforts revert finally to the parents.

3. Mental hygiene recognizes the importance of alcohol, drugs, syphilis and infections in their damaging effects on the brain. But the field, especially neglected, and ineffectively cared for, is that of environment; modified by preventive measures against personality catastrophes; and by the importance of the axiom that the earlier the efforts, the greater the modification of the behavior of any living organism.

FOOD POISONING*

SOME EXPERIMENTAL ASPECTS

By J. C. GEIGER, M. D.
San Francisco

FOOD poisoning, as it is understood today, is the result, directly or indirectly, of the contamination of food with certain bacteria. Clinically it may be classified as an intoxication. It is probably as old a condition as any of the diseases affecting the human being and consequently has been known by a much varied terminology.

TWO TYPES OF FOOD POISONING

The scientific worker generally recognizes two types of food poisoning. One type is due to the contamination of the food with the paratyphoid-enteritidis group or other bacterial organisms, either through the agency of a human or animal carrier or from the meat of an animal suffering from a specific infection with these germs. Subsequent incubation of the contaminated food through improper and insufficient cooking, refrigeration or storage, allows the bacteria to secrete, in their growth, a poisonous product, or, perhaps in the process of heating, certain products become soluble and evidently poisonous. The consumption of such food is followed within several hours by symptoms of nausea, abdominal pain, vomiting, prostration, diarrhea, and perhaps fever. Complete recovery within forty-eight hours is the rule.

The other type of food poisoning is known as botulism. It is due to the contamination of the food with a specific bacterium known generally as the *Bacillus botulinus*. This germ is found in the soil practically throughout the world. It exists in nature in the form of a spore and as such is not poisonous. When so-called nonacid or slightly acid foods, such as many vegetables, fish, and meat, are preserved by faulty and unsanitary methods, botulinus poisoning may occur. The symptoms usually appear within twenty-four to forty-eight hours after the consumption of the poisonous food. There may be marked muscular weakness, disturbances of vision, loss of ability

to swallow and talk, constipation, rapid pulse and subnormal temperature, rarely any pain, and death from respiratory failure. This somewhat rare type of poisoning, so serious because of its high death rate, has apparently been eliminated from commercially canned foods. It is regrettable that home-canning methods antedate the present-day knowledge of botulism and that, with a few exceptions, no effort has been made to correct them. Only boiling for a sufficient length of time after removal from the glass jar or can before being served will make home-canned foods reasonably safe.

COMPARATIVE PROCEDURES IN TWO TYPES OF FOOD POISONING

It is deemed important to point out briefly in a table the different investigative procedures that are suggested in outbreaks and the clinical symptoms in both types of food poisoning. This paper, however, will concern itself only with the first type under discussion. This type, popularly known as ptomain poisoning, because of its relative statistical importance, has intrigued a number of investigators. Many of the factors operative in outbreaks, however, are experimentally and epidemiologically yet obscure.

BACTERIA CONCERNED IN OUTBREAKS

The generally accepted causative bacteria in food-poisoning outbreaks of the first type under discussion are the paratyphoid-enteritidis group. *B. enteritidis* was isolated by Gärtner¹ in 1888 in an outbreak due to meat. The source of the meat was an animal slaughtered because of its being ill from enteritis. Hübener,² Savage and White,³ Spray,⁴ and Geiger⁵ have also recorded outbreaks due to this organism. Besides specific infections and possible carriers in animals, another source of *B. enteritidis* is the commercial rat viruses which are not infrequently used for the destruction of rodents in and around food establishments, especially bakeries and canneries. Health agencies have not generally recognized this possible source of contamination and taken steps to regulate their use. Of the specific paratyphoid group, outbreaks have been attributed to *B. paratyphosus A* and *B* in the United States by Geiger.⁵ At this point one of the numerous difficulties as to classifying causative bacteria now arises, because of the terminology as to subtypes of *B. paratyphosus B*. Likewise, the term "Salmonella group" is often used to add to the confusion. Furthermore, Savage and White³ refer to "Mutton and Derby types." Jordan⁶ has attempted to classify the matter of types by using the term *B. paratyphosus B* "Schottmuller type" and limiting such a type as coming from human sources. Many investigators, however, classify another type of *B. paratyphosus B* "Aertrycke type" and whose source is presumably from animals. It is this organism *B. aertrycke* which is supposed to be the commonly causative bacterium in most outbreaks of food poisoning.

The other bacteria involved in, or thought capable of causing outbreaks, are *B. suipestifer*, *B. pullorum*, and *B. anatum*. In fact, Geiger, Ward, and Jacobsen,⁷ in a study of the bacterial flora

* From the Hooper Foundation, University of California, San Francisco.

* Read before the Pathology and Bacteriology Section of the California Medical Association at the Fifty-Eighth Annual Session, May 6-9, 1929.

TABLE 1.—Comparative Procedures in Two Types of Food Poisoning

GENERAL FOOD POISONING	BOTULISM
INCUBATION PERIOD	INCUBATION PERIOD
Usually three to eight hours, rarely over twelve.	Usually twenty-four to forty-eight hours.
TREATMENT	TREATMENT
Supportive and eliminative.	Botulinus antitoxin, specific type; absolute quiet; eliminative.
INVESTIGATIVE PROCEDURE	INVESTIGATIVE PROCEDURE
<div>1. Use incubation period for basis of determining the causative meal.</div> <div>2. Always suspect freshly cooked or warmed-over foods. Preserved foods are rarely at fault. Foods are apparently good as to taste, appearance, odor and texture.</div> <div>3. Bacteriologic examination of excreta of patients and the suspected food for the paratyphoid group and other organisms. Feeding of mice with suspected food both direct and by stomach tube.</div> <div>4. Bacteriologic and epidemiologic search for human carriers and possible contamination from animal sources.</div> <div>5. Complications: appendicitis, cholecystitis, persistent elevation of temperature (paratyphoid infection).</div>	<div>1. Use incubation period for basis of determining the causative meal.</div> <div>2. Always suspect preserved foods; likewise, meat products such as sausages. Spoilage of foods is noted in many instances.</div> <div>3. Test of suspected food for toxin by animal inoculation; mice, guinea-pigs or rabbits. Test for type with specific antitoxin. Culture of suspected food for the presence of spores, particularly if food has been previously boiled.</div> <div>4. Search for domestic animals, such as chickens with symptoms of limberneck, for corroborative field and laboratory evidence.</div> <div>5. Complications: bronchopneumonia.</div> <div>6. Human outbreaks are usually due to Type A toxin.</div>
SYMPTOMATOLOGY	SYMPTOMATOLOGY
Sudden onset; nausea, vomiting, abdominal pain, prostration, diarrhea and rise of temperature.	Delayed onset; marked muscular weakness; gastrointestinal symptoms, rare; disturbances of vision with diplopia and blepharoptosis; loss of ability to swallow and talk; constipation; rapid pulse and subnormal temperature; rarely any pain; death from respiratory failure.
Mortality, 0 to 1 per cent. Case infectivity rate high.	Mortality over 60 per cent. Case infectivity rate usually 100 per cent.

of oysters, directed attention to the possibility that these are a number of organisms associated with various foods, but particularly meat products that are members of the paratyphoid-enteritidis group. Geiger and his coworkers⁸ described an outbreak of food poisoning due to crab meat, and reported further work on the bacterial flora of market meat. They pointed out that many of these organisms do not lend themselves to classification with any of the better known organisms. The presence in foods of any of these so-called "intermediate strains" seems to indicate unsatisfactory sanitary methods of handling foods and may be responsible for outbreaks of a gastro-intestinal nature. The health agencies investigating such not infrequent occurrences sometimes find bacteria present that are ordinarily considered innocuous or harmless, or cannot be identified as accepted members of known groups. Should the laboratory tests not be carried farther, or should the isolated unidentified bacteria be not blamed, negative reports may be made. This particular phase of the problem has been recently emphasized by Buchanan and his coworkers.⁹ These authors accredit three outbreaks of food poisoning to *B. cloacae*. Geiger⁵ had previously reported an outbreak due to *B. proteus*. Apparently, therefore, the numerous types of bacteria that can cause food poisoning are not limited to any particular group, or are perhaps unlimited provided certain biological conditions as to media, temperature, and possibly others, are fulfilled. Until these conditions are more fully understood, food poisoning will remain an interesting problem of many intricacies.

HEAT-STABLE POISONS IN FOOD POISONING

Most authorities agree that the clinical manifestations, namely, incubation period of several hours, abdominal pain, nausea, vomiting and diar-

rhea, and sometimes temperature, are those of an intoxication. The demonstration in the laboratory of a toxin or poison in the causative food, however, is apparently associated with technical difficulties. Even the production of experimental food poisoning, as demonstrated by Geiger and his coworkers,^{10 11} with filtrates of known contaminated foods is unusually rare.^{1 2} Therefore the explanation of the mechanism of the production of this type of poisoning from food has long been sought. In fact, in many instances in alleged outbreaks neither an organism nor a toxin or poison can be demonstrated. Nor can the absence of an infection following the ingestion of contaminated food be fully explained, at least when some strains of *B. paratyphosus A* and *B* are concerned and isolated.⁵ One difficulty to be surmounted has been to find a susceptible laboratory animal for experimental work. Branham and her associates¹² and more recently Dack,¹³ Cary, Harmon and Dack, Harmon and Jarra, all of the University of Chicago, have reported conflicting results in experiments performed. Where Branham used mice and reported delayed results (5-10-14 days) Dack and his associates used rabbits, monkeys, human beings, and one cat with practically negative results. All of these workers reported the use of heat-killed cultures, thereby simulating to a great extent the conditions usually found in outbreaks. Dack, Jordan, and Ward,¹⁴ however, report positive results in monkey by feeding living *Salmonella* cultures. It is interesting to note that Dack¹³ had previously reported a negative result when one monkey was so fed. Savage and White,³ Geiger and others^{10 11} have sought for the intestinal irritant substances probably produced by the paratyphoid-enteritidis group. Gärtner¹ as early as 1888 observed significant clinical and pathologic manifestations in mice fed with meat pre-

viously contaminated with *B. enteritidis* and heated for one hour at 100 degrees. Bahr and Dyssegard¹⁵ tested the toxicity of these organisms by injections of filtrates or boiled cultures. Geiger and Meyer,¹⁶ in a preliminary report, apparently have solved the technical difficulties. These authors record positive results when white mice are fed whole heated cultures. The symptoms appear in a few hours and death usually in twelve to twenty-four hours. The pathological picture described a distended duodenum, the hyperemic jejunum and ileum and the pleural effusion considered as pathognomonic for experimental food poisoning in mice. Rabbits, cats, and guinea pigs were not affected in the same manner, but a monkey did show symptoms when fed with ten cubic centimeters of a potent poison.

Experimentally, there appears to be no doubt that heat-stable poisons can be produced by a group of bacteria usually classified as causative agents in outbreaks of food poisoning. Reports of outbreaks in the United States from food alleged to contain heat-resistant bacterial poisons have been singularly lacking. Confirmation of one report, however, has been offered by Pryer.¹⁷ The recent preliminary report of Geiger and Meyer¹⁶ on experimental food poisoning appears to indicate that the white mouse is the most susceptible orally to certain bacterial poisons and, therefore, the logical laboratory animal for test purposes. It is quite possible that this laboratory phenomenon may be extended to include other bacteria not so well known in food poisoning. It does, indeed, throw further light on the production of this interesting clinical entity.

Hooper Foundation, University of California.

REFERENCES

1. Gärtner, W.: *Correspondenz-Blatter d. ärztl. Vereins v. Thüringen*, 1888.
2. Hübener, E.: *Fleischvergiftungen und Paratyphusinfektionen*. Jena, 1910.
3. Savage and White: *British Med. Res. Council, Special Rep., Series 92*, 1925.
4. Spray, R. S.: *J. A. M. A.*, 86, 109, 1926.
5. Geiger, J. C.: *J. A. M. A.*, 81, October 1923.
6. Jordan, E. O.: *J. Infect. Dis.*, 36, 1925.
7. Geiger, Ward, and Jacobsen: *J. Infect. Dis.*, 38, March 1926.
8. Geiger, Greer, and White: *Am. J. Pub. Health*, 18, May 1928.
9. Buchanan, Enos B., and Emerson, McGrail: *J. Infect. Dis.*, March 1929.
10. Geiger, Davis, and Benson: *Am. J. Pub. Health*, 1924, 14, p. 578.
11. Geiger, et al: *Am. J. Pub. Health*, 1924, p. 309.
12. Branham, Rahey, and Day: *J. Bac.*, 1928, 15, p. 36.
13. Dack, Harmon, and Jarra: *J. Prev. Med.*, 1928, 11, No. 6. Dack, Cary and Harmon: *J. Prev. Med.*, 1928, 11, No. 6.
14. Dack, Jordan, and Ward: *J. Prev. Med.*, No. 6, November 1928.

15. Bahr and Dyssegard: *Centralbl. f. Bakteriöl.*, 1927, 102, p. 268.

16. Geiger and Meyer: *Proc. Soc. Exper. Biol. and Med.*, 1928, 26, No. 2, November 1928.

17. Pryer, R. W.: *Am. Jour. Pub. Health*, 19, 208, February 1929.

INTUSSUSCEPTION—ITS ROENTGENOGRAPHIC DIAGNOSIS*

REPORT OF CASES

By KENNETH S. DAVIS, M. D.

AND

CARL PARKER, M. D.

Los Angeles

DISCUSSION by Orville N. Meland, M. D., Los Angeles; Henry Snure, M. D., Los Angeles; Karl M. Bonoff, M. D., Los Angeles.

IN recent years there have been found many new fields of usefulness in roentgenographic diagnosis; among these the recognition of intussusception, with occasional case reports, has appeared in the literature. However, the reports published indicate that in many instances the findings were those of intestinal obstruction, the exact diagnosis being made only as a result of surgical exploration or postmortem examination. A typical case of intussusception without complete obstruction presents definite diagnostic roentgenographic evidence of its presence and should be fairly easily recognized when the roentgenologist has become familiar with its appearance.

In cases of intussusception with acute intestinal obstruction the patient is critically ill, and immediate surgery too obviously indicated to permit any prolonged roentgenographic study to be made. Under these circumstances the roentgenologist should be content in diagnosing an obstruction and determining its approximate location without attempting to determine the nature of the obstructing lesion. This is easily done by taking a flat plate of the abdomen and pelvis preferably through a Bucky diaphragm, the diagnosis being based on a gas-distended bowel above the obstructed site.

INCIDENCE AND VARIETIES

Intussusception occurs most commonly in infants; over 60 per cent of the cases on record are in the first year of life. It is the most common cause of intestinal obstruction at this age. Holt reports 358 cases of intussusception, and Wichman was able to collect 724; the majority of these were in infants or children. Eliot and Corscaden have collected 300 cases in adults.

Intussusceptions may occur in any part of the gastro-intestinal tract, but those occurring at the ileocecal valve are by far the most common. Intussusceptions of the small bowel are called

* From the x-ray laboratories of St. Vincent's Hospital, Los Angeles, and the Pasadena Hospital, Pasadena.

* Read before the Radiology Section of the California Medical Association at the Fifty-eighth Annual Session, May 6-9, 1929.



Fig. 1.—Barium Enema—Case 1. Note the central "gas-filled" filling defect in the cecum and ascending colon commencing at the ileocecal junction.

enteric; those of the colon, colic; and those at the ileocecal valve, ileocecal.

ETIOLOGY

Two important anatomic circumstances must be considered in relation to the causation of intussusception.

1. The difference in diameter of the small and large intestines.
2. An abnormal length and mobility of the mesentery.

The fact that there is an incompetent ileocecal valve in most infants may be a factor. Over one-third of the reported cases of intussusception in adults have been caused by tumors protruding into the lumen of the bowel; the tumor always being found at the apex of the intussusceptum. Both of the cases in the present report were caused by lymphosarcoma of the terminal ileum with polypoid growths protruding into the lumen of the bowel.

Meckels' diverticulum, the vermiform appendix, ulcers of the bowel and enlarged lymph nodes pressing on the wall of the small intestine are all mentioned as being the causes of intussusception. Increased peristalsis in infants is a common cause of intussusception, this usually being brought on by a change in diet.

PATHOLOGY

Intussusception is simply the invagination of one part of the bowel into the part continuous with it, either above or below. In the former case we speak of an ascending invagination, in the

latter of a descending one. Naturally the descending type is the more common. The portion of bowel acting as the cover is called the intussusciens, while the included part is the intussusceptum. The neck is that part of the bowel where the intussusceptum passes over into the intussusciens. The apex is the part of the intussusceptum projecting upwards or downwards into the bowel cavity. Double invaginations are occasionally seen in which an intussusception itself becomes a part of an additional invagination process.

The circulatory disturbances due to traction and compression of the mesentery are of the gravest importance, and are in direct relationship to the rapidity of onset and the tightness of the constriction. Venous stasis with exudation, infection, inflammation and even gangrene at the neck of the intussusceptum constitute the prominent points in the morbid anatomic sequence. In less intense degrees of strangulation adhesions may form between the peritoneal coats rendering the anatomic relations permanent. In such cases after the disappearance of the edema and constriction the intestine may again become patent. On the other hand sloughing of the entire intussusceptum may lead to spontaneous recovery. This occurs only rarely in children, but is fairly common in adults. Wichman found sixty-eight such cases in his series.

CLINICAL FINDINGS

The symptoms and physical findings in intussusception are so well known that only a brief summary will be given here. Onset is sudden with severe cramping pain and vomiting; the pain occurs paroxysmally every few minutes. In cases with obstruction there may be one or two



Fig. 2.—Sketch of the surgical findings, Case 1. Note the double intussusception with a tumor mass protruding into the lumen of the bowel. Compare with Fig. 1.



Fig. 3.—Photograph of the resected bowel showing the pedunculated tumor mass. At biopsy this was found to be a lymphosarcoma.

loose bowel movements and then only blood, or blood and mucus are passed. Bowel movements are accompanied by marked tenesmus. With these symptoms there is noted prostration, pallor, feeble pulse and a normal or nearly normal temperature.

There is a palpable tumor corresponding to the site of the intussusceptum. This becomes more prominent during the paroxysms of pain, an important diagnostic point. The abdomen is usually relaxed between paroxysms.

If the obstruction is complete, the clinical picture is that of acute ileus, but even in these cases there may be found a localized tenderness on palpation over the intussusception and at times a palpable mass.

ROENTGENOGRAPHIC FINDINGS

The barium enema is the method of choice of most roentgenologists in diagnosing intussusception, as it does not interfere with emergency surgery, and more accurate interpretations can be made from its findings. These vary, depending on the presence or absence of adhesions, tumor, edema and constriction, on the reducibility of the intussusceptum and on the relative diameter of the intussusceptum and the intussusciens.

Early in the course of the disease, before adhesions are formed, there is noted a temporary obstruction to the flow of the barium at the apex

of the intussusceptum but by change of position, rotation and maintenance of pressure the barium can be made to pass peripherally about the intussusceptum, leaving a central, gas-filled, filling defect. See Figs. 1 and 5.

After the formation of adhesions or with marked edema there is a complete obstruction to the flow of the barium. However, in these cases there is noted a cupola or a "U"-shaped deformity formed by the apex of the intussusceptum which at times contains gas, a filling defect not commonly observed in other lesions causing obstruction. See Fig. 6.

Karshner, in a personal communication, states that in one case of intussusception at the Children's Hospital the barium enema was successful in reducing the intussusception. In this instance the child's life was undoubtedly saved, as it was admitted to the hospital because of a bronchopneumonia and developed the intussusception while in the hospital. There has been no recurrence of the trouble, although several months have elapsed. Ashbury cites a similar case, but raises the point that surgery should be resorted to despite the reduction, as there is apt to be a recurrence.

Naturally in enteric intussusception the barium enema is of no value, but as these comprise less than 30 per cent of the total number of cases, a normal colon on fluoroscopic examination, together with a flat plate of the abdomen, should exclude the more common types.

Groedel and Altschul each report a case of intussusception in which the barium enema failed



Fig. 4.—The six-hour motor meal study—Case 2. In this film there is an apparent absence of the cecum and part of the ascending colon, the barium showing as a narrow tubular tract.



Fig. 5.—Barium Enema—Case 2, September 16, 1926. This illustrates very well the central gas-filled defect observed in the early stages of intussusception before the formation of adhesions.

to show evidence of lesion, the diagnosis being based on a motor meal study. In Groedel's case the roentgenographic findings were not at all characteristic, suggesting an ileocecal stenosis rather than an intussusception. Altschul's findings in the motor meal study are in accord with those noted in one of our cases in which there was an apparent absence of a segment of bowel. In the six-hour examination the head of the barium meal had reached the descending colon. In the region where one would normally expect to find the cecum and ascending colon the barium showed as a narrow tubular tract without the usual bowel form or normal haustra. Beyond the hepatic flexure haustral indentations again appeared. See Fig. 4. In Altschul's case there was the same narrowed barium-filled bowel (the intussusceptum); surrounding this was the intussusciens which was visualized as it contained gas. The borders of the intussusciens showed definite haustral markings. In view of these findings it is difficult to explain the absence of positive roentgenographic evidence of intussusception in the barium enema.

REPORT OF CASES

CASE 1.—Miss H. C., thirty-two years of age, was admitted to St. Vincent's Hospital complaining of severe colicky pain in the lower abdomen of about two weeks' duration. These pains came on in attacks and were relieved by application of heat to the abdomen or by enema. The pain had no relationship to meals, menses or urination. She had been able to work until three days before admission, when the pain became very severe and seemed to settle in the right lower quadrant.

At this time she first noticed a mass in her right side. The mass was tender and quite hard during the attacks of pain, but seemed to become softer between attacks. The patient stated that she felt sure the mass changed position from time to time. Patient had had fairly normal bowel movements throughout her illness. She had had a similar attack of pain several weeks prior to onset of present illness; this, however, lasted only a few hours. Patient was nauseated but did not vomit.

It is interesting to note that the patient had had an appendectomy performed in 1925. At this time symptoms were typical of an acute appendicitis, the biopsy of the removed appendix confirming these findings. The patient was apparently completely relieved from symptoms for over two years.

Physical Examination showed a well developed and well nourished young woman. The abdomen was slightly distended and there was a moderate muscle spasm on deep palpation. There was also noted an irregular mass in the right lower quadrant. Pressure on the mass caused a return of the cramp-like pains. Pulse 90, respiration 20, temperature 99.1 degrees Fahrenheit. Blood count: white blood cells 6837, polymorphonuclears 68 per cent, lymphocytes 30 per cent, red blood cells 4,720,000, hemoglobin 80 per cent.

Roentgenographic Findings: A "flat" roentgenogram was made of the abdomen to rule out acute intestinal obstruction in view of the history of appendectomy. There was no gas in the small bowel. The cecum and ascending colon both contained some gas, but they were not markedly distended and both showed normal haustral markings.

Barium Enema: There was no obstruction to the flow of the barium at any point and the contour of the colon was normal throughout. However, there was noted a central gas-filled filling defect extending from the ileocecal juncture up into the ascending colon for a distance of six to seven inches. On rotation of patient and on palpation, this gas shadow remained



Fig. 6.—Barium Enema—Case 2, September 25, 1926. At this time adhesions had formed between the layers so barium could not be forced around the intussusceptum. This is a good illustration of the cupola filling defect noted by many writers.

constant, which one would not expect if it were free gas in the colon. At the ileocecal juncture this gas shadow resembled a finger-like projection into the cecum. See Fig. 1. A diagnosis of intussusception was made on the basis of these findings and immediate laparotomy advised.

Surgical Findings: In opening the abdomen the cecum was found to be moderately enlarged. On palpation a mass was felt within its walls, and the small bowel was invaginated into the cecum through the ileocecal valve. By making traction on the small bowel and pressure from above the mass, about six inches of the bowel was drawn out. At this point a second mass was felt obstructing the opening. This finally was pushed through the ileocecal valve with some difficulty. Examination disclosed a second intussusception surrounding a small hard tumor mass. This portion of the ileum was resected and an end to end anastomosis done. See Fig. 2. On opening the ileum there was noted a small round tumor about two and one-half centimeters in diameter projecting into the lumen of the small bowel at a point about seven inches above the ileocecal juncture. See Fig. 3.

Biopsy Report: "The tumor is composed of large lymphocytic cells round or oval in form with oval nuclei and granular chromatin. Many of the nuclei are hyperchromatic and a great many are undergoing mitosis. There is no evidence of an alveolar arrangement of the cells. The tumor is evidently a rapidly growing sarcoma, probably a large celled lymphosarcoma, arising from the lymphoid tissue of the bowel."

Patient had an uneventful convalescence following the operation and gained rapidly in general health, going back to work within a month. There was no recurrence of the pain noted prior to operation. A series of x-ray treatments was given for several months—despite these a tumor mass appeared in the right lower quadrant and grew steadily in size. She then failed rapidly, losing both in weight and strength, and died on July 11, 1928. At the time of her death the whole abdomen was filled with a large irregular-shaped nodular mass. No axillary, inguinal or cervical lymph nodes were palpable at any time and the lungs were free from metastases.

Comments: This case is interesting from several different aspects. *First*, the double intussusception of the terminal ileum, the primary cause being a small tumor mass projecting into the lumen of the bowel. *Second*, the fact that x-ray therapy had no appreciable result on the recurrence and growth of the tumor, whereas ordinarily lymphosarcoma is unusually susceptible to radiation therapy. *Third*, the operation for the subacute appendix two years prior to onset of symptoms. The biopsy of the removed appendix showed it to be subacutely inflamed and the patient made a complete recovery following the operation. In all probability the intussusception was not present at the time of this operation.

CASE 2.—Sophia B., a school girl, thirteen years of age, was admitted to the Pasadena Hospital complaining of nausea and colicky pain in the upper abdomen referred to the back. Her temperature was 99 degrees Fahrenheit, and the pulse ranged from 95 to 120. Bowels were irregular but the stool fairly normal in appearance. On palpation there was a poorly defined tender mass in the region of the ascending colon. The mass varied somewhat in size and definiteness from day to day. The appendix had been removed about six weeks previously in a Los Angeles hospital. At that time she was having symptoms similar to the symptoms on admission, and had a white count of 16,000. Preoperative diagnosis had been acute appendicitis, but when the appendix was removed it showed less pathology than was expected. Numerous mesenteric lymph nodes were palpated and when the patient had a recurrence of her symptoms a few days after the appendectomy her surgeon was convinced that the condition was one of tuberculous mesenteric

glands. The first x-ray examination was done September 15, 1926. The preliminary roentgenograms of the urinary tract failed to show evidence of opaque calculi, and the fluoroscopic examination of the chest revealed no demonstrable lesion. The stomach and duodenal cap were normal. At the six-hour examination the head of the barium column had reached the descending colon. In the region where one would normally expect to find the cecum and ascending colon the barium showed as a narrow tubular tract without the usual haustral indentations or bowel form. Beyond the hepatic flexure haustral markings again appeared. See Fig. 4. In twenty-four hours practically all the barium had been evacuated.

Barium Enema: There was no obstruction to the flow of the barium from the rectum to the hepatic flexure; here obstruction was encountered, but by change of position, manipulation and maintenance of pressure the barium was made to pass peripherally about the intussusceptum, which left a characteristic, central, gas-filled defect within the outline of the ascending colon. The "U"-shaped or conical defect about the head of the intussusceptum was also nicely demonstrated both in the fluoroscopic examination and on the films. See Fig. 5. The second motor meal study showed barium in the terminal ileum to the point where the intussusceptum entered the intussusciens; the intussusceptum contained gas and practically no barium; while a thin layer of the barium enema given the previous day filled the peripheral region of the ascending colon about the intussusceptum.

Patient refused operation and although she had attacks of colicky pain there was a daily bowel movement. Eight days later a third enema was given. At this time the barium passed only as far as the hepatic flexure as adhesions had developed between the two layers so that no barium could be forced around the intussusceptum. However, the findings were still characteristic with the typical gas-filled, cupola, filling defect caused by the head of the intussusceptum. See Fig. 6. Consent to operation was now obtained and the abdomen opened October 2, 1926. The surgical report is as follows: "The ileum was intussuscepted into itself and then through the ileocecal valve and into the ascending colon. A tumor in the wall of the ileum nine inches from the ileocecal valve was evidently the head of the intussusceptum and the cause of the invagination. The intussusception was successfully reduced. There was no effort made to remove the tumor because of the presence of many mesenteric lymph nodes. An anastomosis was done between the ileum and the transverse colon just beyond the hepatic flexure." Following the operation the patient gained rapidly and soon presented a normal appearance. However, this improvement was only temporary, for she returned to the hospital within six months complaining of a tumor mass, anemia and hemorrhage from the bowel. She died April 21, 1927. The postmortem examination showed the condition to be a lymphosarcoma arising from a Peyer's patch with the greatest involvement in the last ten inches of terminal ileum. The thymus was much enlarged.

COMMENT

This second case illustrates very well practically all of the various roentgenographic characteristics of intussusception as described in the literature.

1. The "cupola" effect produced by the head of the intussusceptum.
2. The central, gas-filled, filling defect.
3. The thin track of barium through the intussusceptum.
4. The apparent absence of one segment of the bowel; in this case the cecum and ascending colon.

5. The annular defect at the beginning of the intussusceptum.

As in Case 1, there had been an appendectomy performed prior to the discovery of the intussusception.

In both of these cases the primary cause of the intussusception was a lymphosarcoma protruding into the lumen of the bowel. In this connection Ewing's description of lymphosarcoma of the intestine is of interest. He states that lymphosarcoma of the intestine is an important type of the disease, occurring most commonly in the ileum. There are two kinds—one with central ulceration and formation of adhesions, the other with polypoid growths protruding into the lumen of the bowel. Metastases occur early in the regional lymph nodes and may extend to many organs. Acute cases resemble appendicitis.

CONCLUSIONS

In intussusception with acute obstruction an extensive x-ray examination is unnecessary and not to be advised. In chronic intussusception the roentgenographic findings vary, depending on the degree, permeability and duration of the invagination, the amount of constriction, presence of edema, adhesions, etc. They are as follows:

1. The *barium enema* early in the course of the affection is characteristic. There is a momentary obstruction to the flow of the barium, but by change in position, manipulation and maintenance of pressure, barium can be made to pass around the intussusceptum leaving a central gas-filled defect.

2. The barium enema after formation of adhesions is equally characteristic. There is then noted a complete obstruction to the flow of the barium—the head of the enema having a characteristic "U" or cupola shape, a filling defect not commonly observed in other lesions causing obstruction. The apex of the intussusceptum may contain gas.

3. The motor meal study may show:

- (a) An apparent absence of one segment of the bowel—usually the cecum or ascending colon.

- (b) A thin track of barium as it passes through the intussusceptum.

- (c) An annular filling defect at the neck of the intussusceptum.

2131 Ocean View Street.

DISCUSSION

ORVILLE N. MELAND, M. D. (1407 South Hope Street, Los Angeles).—Obstructive intestinal lesions, whether acute or chronic, have always been difficult of diagnosis, as regards etiology.

The present publication by Davis and Parker is a distinct contribution since it gives definite roentgen signs as seen in incomplete obstruction due to intussusception. It is impossible to base a diagnosis upon the roentgen signs, but they do give the surgeon an opportunity to be prepared in advance for the condition he is to encounter. He will know exactly where

to make his incision and he will know that he is dealing with an intussusception.

From a pathologic standpoint it is extremely interesting to see that, in both the cases reported, a primary intestinal lymphosarcoma was the cause of the clinical symptoms. Lymphosarcomata are always extremely difficult to handle and these cases were no exception to the rule, for neither surgery nor radiation gave anything but temporary relief. It is conceivable that with earlier diagnosis, through methods as outlined by the authors, the condition may be diagnosed and treated before it has become disseminated.

✽

HENRY SNURE, M. D. (1501 South Figueroa Street, Los Angeles, California).—The authors are to be congratulated on their case reports and the thorough description of the type of intussusception that can be definitely diagnosed by roentgen ray examination. Usually this type of case occurs in the older patient where the percentage of intussusception is less.

Muff, in his case report, mentions another type of filling defect, namely the narrow lumen of barium filled intussusceptum passes through a rose petal shadow, formed by the gas-filled haustra of the ascending colon being crowded together. The same type of rose petal shadow was reported by Karewski in the descending colon in a chronic case where the intussusceptum had progressed to that point. Illustrations of Czepa's case show the apex of the intussusceptum lying in the midportion of transverse colon with crowding together of the gas-filled haustra but no rose petal formation. Stierlin reports cases with roentgenologic shadows similar to Case 1, associated with tuberculosis of the intestine. When tuberculosis was present, the cecum was never displaced upward as is so often the case in other types of intussusception. He also mentions cases of long, narrow, barium-filled lumina in the cecal area, quite smooth in outline and associated with a sausage-shaped mass, that were caused by carcinoma. However, carcinoma usually is irregular in outline, the surrounding gas shadow of the intussusciens is absent and occurs only in the older patients.

The roentgenologic examination does not lose its value in intussusception even when the typical findings presented in the two case reports are absent. The plain film and the barium enema will suggest complete or partial obstruction and indicate surgical intervention as the method of treatment.

✽

KARL M. BONOFF, M. D. (1930 Wilshire Boulevard, Los Angeles).—The authors of this paper are to be complimented on adding to the literature and our ability to diagnose a not uncommon clinical entity. The earlier a diagnosis is established, the better will be the surgeon's result. Practically no time is lost in the acute case by first taking an ordinary or "scout" film of the abdomen as suggested by the authors, and this should be done as a routine procedure in any vague abdominal condition.

One thought that occurs is that possibly both patients complained of some abdominal disturbance prior to their acute attacks, and that a complete gastro-intestinal study would have resulted in a diagnosis of the presence of a tumor mass. This might have prevented the intussusception and the resultant emergency, if at least the pathology had been of any other type of malignancy than lymphosarcoma.

The only case (a child of two years of age), that I personally can recall having made a diagnosis of intussusception upon was similar to Doctor Karshner's, in which a "scout" plate definitely suggested obstruction at the ileocecal valve and upon the administration of an opaque enema the typical findings were present, but an overzealous attempt to fill out the cecum by manipulation resulted in a reduction of the invagination.

VACCINE THERAPY IN INFECTIOUS
BRONCHITIS AND ASTHMA*

By WILLIAM C. VOORSANGER, M. D.
AND
FRED FIRESTONE, M. D.
San Francisco

DISCUSSION by Albert H. Rowe, M. D., Oakland; George
Piness, M. D., Los Angeles.

IN two previous papers¹ the authors attempted to classify nontuberculous cough according to its underlying pathology. Based upon a study of two hundred cases selected from routine clinic and private practice, twenty different causes were found. The two prevailing groups, a 38 per cent "undiagnosed group," and a 37 per cent group which showed a "pulmonary infiltration and thickening with or without enlarged root glands," most often followed influenza, pneumonia, and occasionally pleurisy with effusion.

PREPARATION OF VACCINE

In 1919 I. Chandler Walker^{2,3} pointed out the significance of vaccines in the treatment of bronchial asthma. In his early work he recognized two distinct types of asthmatic patients—those in which some foreign protein, either of the inhalant or ingestive variety, inaugurated the attack, and a second type in which the attack was aggravated or precipitated by a superimposed bacterial infection.

Since the inception of our work on infectious bronchitis and asthma, we have modified somewhat the Chandler Walker technique preparation of vaccines and of dosage, and give herewith a brief résumé of our method of preparing cultures and vaccines including our more recent modifications.

Throughout this work the following bacteriological technique was used: After thorough antiseptics of the mouth, sputum was collected daily for three consecutive days in sterile sputum jars. Thick masses of sputum, raised during an asthmatic attack or during a severe paroxysm of coughing, which usually occurred in the morning, were washed in sterile sodium chlorid solution and shaken in five cubic centimeters of plain bouillon or glucose veal broth of proper hydrogen ion concentration. Tubes of melted plain agar, to which 0.5 cubic centimeters of sterile defibrinated human blood was added, were inoculated with varying amounts of the broth emulsion of sputum and poured into Petri dishes and incubated for thirty-six hours. The various types of colonies were then picked off, subcultivated in dextrose bouillon and incubated for about twenty-four hours. The organisms from this dextrose bouillon growth were stained by Gram's method and a bile solubility test was made. Those organisms which proved to be Gram-negative cocci in chains, noncapsulated and bile insoluble were inoculated, according to the method of Hiss, into litmus waters which contained salicin, mannite,

* From the Chest Department of Mount Zion Hospital, San Francisco.

* Read before the General Medicine Section of the California Medical Association at the Fifty-eighth Annual Session, May 6-9, 1929.

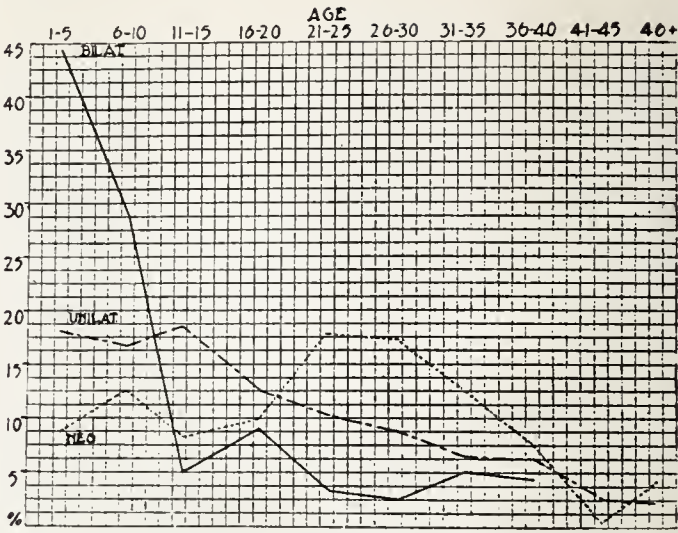


FIG. 1.—Chart showing influence of heredity on age of onset.

and lactose. These serum waters were incubated for fourteen days unless coagulation took place before that time. At the end of fourteen days the tubes in which change had not taken place were carefully examined according to Holman's method of classification. Vaccines were prepared in the strength of one billion organisms per cubic centimeter, the initial dose in adults being 0.05 cubic centimeter, gradually increasing by 0.05 cubic centimeter at a three to five to seven-day interval, this time being governed by the resistance of the patient, as determined by local reaction and constitutional symptoms.

HEREDITY AS A CAUSATIVE FACTOR
IN ASTHMA

Cooke,⁴ in 1925, after a careful survey of the nature of the inheritance in asthma and pre-asthmatic conditions, made a graphic chart showing the influence of heredity on the age of onset. (See Fig. 1.)

Where both father and mother showed some hypersensitiveness 75 per cent of the offspring showed clinical signs before the tenth year; where there is a unilateral heredity, 35 per cent showed symptoms before the tenth year. In the third class, where there is a negative heredity history, 17 per cent showed symptoms before the tenth year. This group comprises the infectious type, and a study of the curve reveals a small peak rising from the first to the tenth year, a fall

TABLE No. 1.—Results of Vaccines in Infectious
Bronchitis and Asthma

CASE NO.	AGE	SEX	DURATION	CLINICAL DIAGNOSIS	X-RAY FINDINGS	SPUTUM CULTURE	TYPE OF VACCINE	ETIOLOGY	RESULT
2	56	FEMALE	31 YEARS	PULMONARY FIBROSIS & BRONCHIAL ASTHMA	PLEURAL THICKENING, APICAL FIBROSIS, ENLARGED ROOT GLANDS	STREP. HEMOL. ALPHA, BETA, VIRIDANS	AUTOGENOUS	CHRONIC BRONCHITIS	UNIMPROVED
4	46	MALE	12 YEARS	CHRONIC BRONCHITIS & ACUTE ASTHMA	PULMONARY FIBROSIS, BASAL CONGESTION	STREP. P. VIRIDANS, HEMOL. BETA, NON HEMOL.	AUTOGENOUS	CHRONIC BRONCHITIS	IMPROVED
15	62	FEMALE	11 YEARS	INFECTIOUS BRONCHITIS & BRONCHIAL ASTHMA	ENLARGED ROOT GLANDS, MARKED BASAL PERIBRONCHIAL	STAPH. AUREUS, STREP. HEMOL. ALPHA, BETA, NON HEMOL.	AUTOGENOUS	REPEATED COLDS	IMPROVED
23	65	FEMALE	6 YEARS	CHRONIC MYOCARDITIS, BRONCHITIS & ASTHMA	CORDAL METTING, CALCIFICATION AT HILUS, PERIBRONCHIAL THICKENING	STREP. VIRIDANS, HEMOL. BETA, NON HEMOL.	AUTOGENOUS	REPEATED COLDS	UNIMPROVED
25	44	FEMALE	1 YEAR	INFECTIOUS BRONCHITIS & ASTHMA	ENLARGED ROOT GLANDS, PERIBRONCHIAL THICKENING	STREP. NON HEMOL. ALFA, CATABASILUS, PNEUMOCOCCUS	AUTOGENOUS	INFLUENZA	WELL
30	16	MALE	2 YEARS	INFECTIOUS BRONCHITIS & ASTHMA	INCREASED BRONCHIAL MARKING, RIGHT HILUS	STREP. VIRIDANS, NON HEMOL. HEMOL. BETA	AUTOGENOUS	REPEATED COLDS	WELL
39	43	MALE	10 YEARS	INFECTIOUS BRONCHITIS & ASTHMA	ENLARGED BRONCHIAL ROOT GLANDS	STREP. HEMOL. ALPHA, BETA, VIRIDANS	AUTOGENOUS	INFLUENZA	IMPROVED
45	41	MALE	12 YEARS	PAIN SENSIBLITIS, BRONCHIAL ASTHMA	ENLARGED ROOT GLANDS, PERIBRONCHIAL THICKENING, PERIBRONCHIAL THICKENING	STAPH. ALBUS, STREP. HEMOL. BETA, VIRIDANS	AUTOGENOUS	REPEATED COLDS, SINUSITIS	UNIMPROVED
55	7	MALE	5 YEARS	INFECTED ANTANA BRONCHIAL ASTHMA	ENLARGED HILUS GLANDS, INFLAM. PERIBRONCHIAL THICKENING	GRAM NEG. BACILLUS, STREP. NON HEMOL.	AUTOGENOUS	INFLUENZA, PNEUMONIA, BRONCHITIS	IMPROVED
62	20	FEMALE	6 YEARS	BRONCHITIS & ASTHMA	PULMONARY FIBROSIS	STAPH. ALBUS	AUTOGENOUS	INFLUENZA, PNEUMONIA, BRONCHITIS	WELL
66	35	FEMALE	9 MONTHS	POST-INFLUENZA BRONCHITIS & ASTHMA	PLEURISY & EFFUSION, BASAL PERIBRONCHIAL	STREP. HEMOL. BETA, VIRIDANS	AUTOGENOUS	INFLUENZA, PNEUMONIA, BRONCHITIS	IMPROVED

from the tenth to the fifteenth year, and a rapid rise to the twenty-first year, where the incidence of asthma stays at a maximal level until over thirty years, to drop gradually to the age of forty when it climbs again, reaching its maximum at the sixty-fifth year. Asthma developing after the thirteenth year, and especially after the fortieth, is usually the result of chronic foci of infection in the bronchi, tonsils, teeth, and sinuses. Here, too, development is gradual. Cough and wheezing and frequent attacks of bronchitis may go on for years before the true dyspnea of asthma begins. Many of the cases of chronic bronchitis with emphysema are truly infectious asthma and should early be recognized, because the results obtained with some of these long-standing cases warrant the belief that much better results could be obtained had they been treated along the same lines that we now follow after they have become definitely asthmatic.

CLASSIFICATION OF CASES TREATED

This present paper consists of a critical review of 481 cases reporting for routine chest examination and includes a series of 110 cases of proved tuberculosis, as checked by physical examination, x-ray films of chest, sputum, and guinea-pig inoculation for tubercle bacilli. These tuberculous cases have been eliminated from this study. Of the remaining 371 nontuberculous cases, we have been able to isolate sixty-six cases of infectious bronchitis and asthma which have received vaccine therapy, and it is this latter series that we report here in detail, giving our observations since 1920.

REVIEW OF SIXTY-SIX CASES OF INFECTIOUS BRONCHITIS AND ASTHMA TREATED WITH VACCINE

All patients treated had a history of some acute pulmonary infection, principally influenza-pneumonia, repeated colds, and in children whooping-cough was an underlying factor. All proved cases of tuberculosis have naturally been eliminated although we have in a few instances seen chronic tuberculosis, complicated with asthma, improve under an autogenous vaccine, which improvement we interpret as resulting from a tuberculin made of the patients' own sputum. (See Table No. 1.)

We have excluded from this study true bronchial asthma of the hereditary type and those cases due to pollen or protein sensitization; in the earlier years of our work, by using the scratch method of Schloss⁵ with dried proteins, but in the last two years using the protein extracts of all the inhalants, danders, house dust and protein antigens by the intradermal technique of Coca and Cooke^{6,7} of the Cornell Clinic. Neither a reflex asthma nor intrinsic asthma are included in this study. In-

trinsic asthma is the result of infectious processes in other parts of the body, such as asthma related to and relieved by removal of an infected gall bladder or kidney or associated with the menstrual cycle.

In our classification we demonstrated that infected sinuses were responsible for 8 per cent of all chronic coughs. We therefore emphatically recommend in all bronchitis and asthma following an acute upper respiratory infection that all sinuses be thoroughly examined, drained if necessary, and a vaccine from the sinus pus or secretion be administered. In our experience we have often seen good results from the latter procedure, and have seldom seen permanent relief from a purely operative correction. How often, after submitting the patient to trying sinus operations—either drainage or the more radical method—have we seen a recurrence of all symptoms or a very temporary relief. We believe frankly that many sinus infections are true secondary infections superimposed upon a sensitive membrane; and we advocate the elimination of every condition of hypersensitiveness or allergic sensitiveness (proved such by protein skin-testing with dust, pollens, danders, and foods) by a period of rest and vaccine therapy before surgery is employed.

A detailed analysis of the sixty-six cases of infectious bronchitis and asthma reveals the following:*

Fifteen, or 22.7 per cent, we classify as "well," by which we mean the patient has been clinically relieved of all evidence of the acute paroxysms of wheezing with signs of bronchospasm for a period of over two years. We avoid the term "cured" as we feel that, in the future, repeated epidemics of influenza or other acute respiratory diseases may so alter the bacterial flora of the patient as to break down the resistance established and possibly precipitate an asthmatic attack.

Twenty-seven, or 40.9 per cent, are considered as "improved," by which we mean the patient has been relieved for over a period of six months of the real asthmatic paroxysms, has lost the associated cough and dyspnea on exertion, and is able

* The table showing the results of vaccine treatment in infectious bronchitis and asthma will appear in the reprints of this article, which may be had on application to the authors.

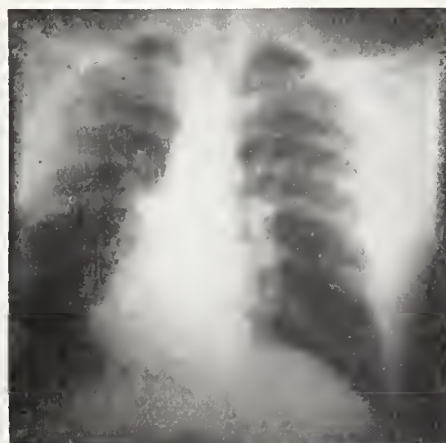


Fig. 2.—Infectious bronchitis following influenza. Marked thickening of both hila with dilatation of bronchial tubes. Marked improvement under vaccine.



Fig. 3.—Bronchial gland involvement. History of influenza with subsequent bronchitis and asthma. Patient well after three years.

to return to his routine of living.

The remaining twenty-four, or 36.4 per cent, we have considered as "unimproved," in that they still have their nightly paroxysms of dyspnea with severe morning cough, produce large quantities of a watery, frothy sputum and, clinically, present signs of bronchospasm in their chests.

The combined group of well and improved patients comprise, in our small series of sixty-six cases, 63.6 per cent, and from this we conclude that vaccine therapy affords a valuable aid to our armamentarium for combating the infectious type of bronchitis and asthma. A review of the cases presented will show that our results have been almost directly in proportion to the age at onset and duration of the illness, and we feel that the earlier specific vaccine therapy is instituted the more beneficial results can be anticipated. We find further that of these cases that have responded so well that a recent history of repeated colds, sinusitis, influenza, bronchopneumonia, and whooping-cough have been the chief etiological factors.

In the group of 36.4 per cent that are "unimproved" we find, from our study of the physical and x-ray findings, that the poor results are the results of structural changes in the lung parenchyma such as pleural thickening, fibrosis, basal infiltration and bronchiectasis, or an associated myocardial lesion. It is self-evident that all infectious bronchitis and asthma had a start perhaps with an enlarged hilus gland, perhaps with peribronchial thickening, or even with mild extension into the lung parenchyma. This pathology must be discovered early if we are to effect cures and prevent chronic bronchitis, asthma, bronchiectasis, or even tuberculosis. We believe that this can be done and that our studies and results will encourage others to adopt the method of careful investigation of cough of over six weeks' duration by physical, bacteriologic, and x-ray examinations.

Our roentgenograms, a few of which have been inserted as illustrations, demonstrate clearly how cases with lung parenchyma involvement can be differentiated from those without. Pictures 2, 3, 4, and 5 are examples of types which did well under vaccine therapy. Pictures 6 and 7 are illustrative of types which did not do well

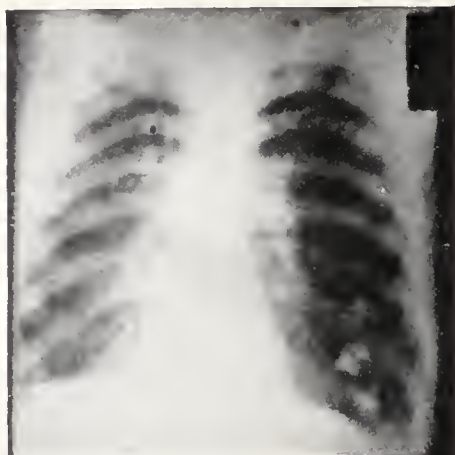


Fig. 4.—Marked thickening of both hila. Thickened pleura at both apices. Lipiodol present after two years. Marked improvement under vaccine.

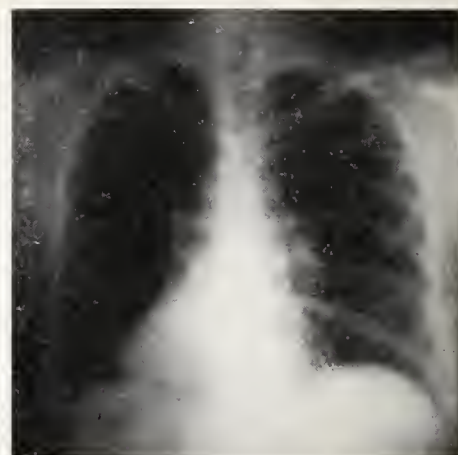


Fig. 5.—Pleural thickening at left base following pleurisy with effusion. Bronchitic and asthmatic symptoms improved under vaccine.

and show considerable involvement of lung parenchyma.

A review of the cultural studies, as previously reported in this group of infectious asthma, shows the prevailing organisms to be: *Micrococcus catarrhalis*, *Streptococcus nonhemolyticus*, *Streptococcus hemolyticus alpha* and *beta*, *Streptococcus viridans*, and secondary invaders such as Gram-positive diplococci, staphylococci, and pneumococci.

In a series of twenty-two cases where we were unable to trace the onset of the asthmatic paroxysms to a specific infectious process, such as influenza, pneumonia, or whooping-cough, we resorted to the use of the ordinary stock respiratory vaccine and found that our percentages of results were:

Well—Seven cases, or 32 per cent.

Improved—Eight cases, or 36 per cent.

Unimproved—Seven cases, or 32 per cent.

These figures run parallel to our results with autogenous vaccines, and are in agreement with the work of Rackemann,⁸ who does not claim specificity for autogenous vaccines. We are convinced that vaccines help in almost two-thirds of the infectious bronchitis and asthma cases, and cannot yet be sure from a culture of the sputum which cases will benefit and which will not. We do not even claim that many of our "good results"

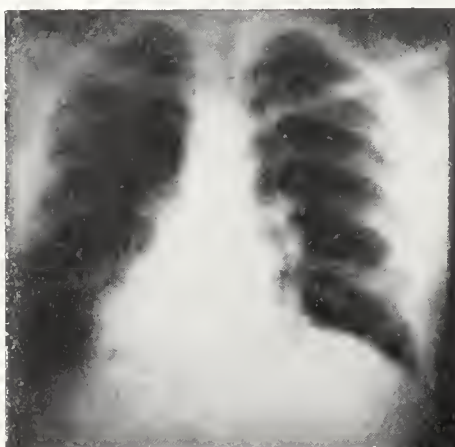


Fig. 6.—Asthma with cardiac enlargement. This type does not do well under vaccine.

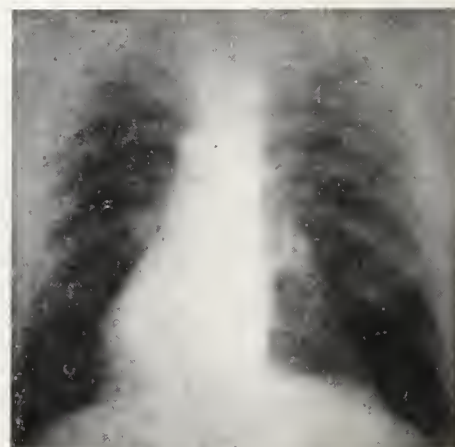


Fig. 7.—Infiltration at right hilus spreading into lung parenchyma. This type does not improve under vaccine.

may not have been just as good under rest without a vaccine. We give our results for what they are worth, believing firmly that many patients whose asthma or bronchitis is of the infectious variety can be aided by vaccine therapy and thus prevented from becoming hopeless chronic types.

CONCLUSIONS

In a study of 481 cases of chronic cough of over six weeks' duration we were able to segregate sixty-six cases of infectious bronchitis and asthma that had received vaccine therapy. In our sixty-six cases receiving vaccine therapy we classify 63.6 per cent as well and improved, and 36.4 per cent as unimproved.

A series of twenty-two cases treated with stock respiratory vaccine give parallel results, so that we do not claim specificity of autogenous vaccines.

Cultural studies to date do not inform us which cases will do well; we are influenced by the duration of the illness, age of onset, and history of repeated colds, influenza, pneumonia, and whooping-cough.

We believe that two-thirds of the cases of infectious bronchitis and asthma are amenable to vaccine therapy and that failure is the result of structural changes in the lung parenchyma or an associated myocardial lesion.

490 Post Street.

REFERENCES

1. Voorsanger, William C., and Firestone, Fred: Undiagnosed Cough, *Jour. A. M. A.*, lxxxix, 1137-40, October 1, 1927.
2. Walker, I. Chandler: The Treatment of Bronchial Asthma with Vaccines, *Arch. of Internal Medicine*, xxiii, 220, 1919.
3. Walker, I. Chandler, and Atkinson, June: Bacteriological Examination of Seven Hundred and Twenty-Four Sputums from as Many Patients with Bacterial Asthma, *Arch. of Internal Medicine*, iv, 601-13, April 1928.
4. Cooke, Robert A: Asthma and Preasthmatic Conditions, *Med. Jour. and Rec.*, November 4, 1925.
5. Schloss, O. M.: *Amer. Jour. Diseases of Children*, iii, 341, 1912.
6. Cooke, R. A.: *Laryngoscope*, xxv, 108, 1915.
7. Cooke, R. A., and Vander Veer, A., Jr.: *Journal of Immunology*, i, 201, 1916.
8. Rackemann, Francis M., and Graham, Lillian B.: The Vaccine Treatment of Asthma, *Journal of Immunology*, viii, No. 4, July 1923.

DISCUSSION

ALBERT H. ROWE, M. D. (242 Moss Avenue, Oakland).—The paper of Doctors Voorsanger and Firestone is of great interest. It serves to emphasize two things: First, that bacterial allergy exists in a certain number of cases of asthma. Second, that nonspecific protein therapy by the use of vaccines produces in some asthmatics a nonspecific desensitization.

I feel that certain cases in their series probably are sensitive to some antigens which have not been demonstrated by the writers. During the last two years I have emphasized in several articles the fact that food allergy exists in at least 50 per cent of all food-sensitive patients without skin reactions. Alexander, using the intradermal test, is of the same opinion. A smaller percentage of pollen- and animal-emanation-sensitive patients have negative skin reactions, and with these facts in mind and an emphasis on the clinical history, and the use of my elimination diets and environmental control for diagnosis, I have found that many cases formerly classified as nonsensitive and probably due to bacterial allergy have food or other types of specific sensitization. Such cases are helped by nonspecific treatment, as witnessed by pep-

tone therapy in England and France, but the results are certainly not as satisfactory or permanent as when the specific sensitization is found.

However, I feel there are a moderate number of bacterial-sensitive asthmatics, and the writers have undoubtedly seen more of these patients than are seen in the usual allergic clinic. Bacterial allergy, in my experience, is very uncommon in children and young adults. Superimposed sinusitis and bronchitis is not infrequent. The clearing up of sinus infection by surgery at times in nonsensitive patients is necessary, but I agree with Doctor Firestone that vaccine therapy should precede and follow such surgery to build up immunity or produce desensitization. The use of sputum filtrates made according to Wilmer's technique has been of value in a few cases in my work, and the use of vaccines in pure cultures which give local reactions with intradermal testing is to be recommended. The use of x-ray therapy, as recommended by various men, has been given a definite trial in my clinic without satisfactory results, and there is no justification for it where specific sensitization can be demonstrated.

✽

GEORGE PINESS, M. D. (1136 West Sixth Street, Los Angeles).—Since the influenza epidemic of 1918 it has been our privilege to see a great many cases similar to those described by the essayists today. It is apparently a very common sequela to influenza and other acute infectious diseases such as pneumonia, tuberculosis, and similar conditions. It is very interesting to note, too, that the ages of most of the patients studied by the doctors were in the fourth decade of life although there is a small percentage of very young individuals in the first decade of life which is rather unusual in that it is uncommon to see infectious or bacterial types of bronchial asthma in young individuals. However, apparently there is an infectious history beyond each one of these cases.

There are several rather interesting points I wish to emphasize. The first is that apparently each and every one of these individuals was of a bacterial type because, first, they were tested to proteins of all groups and found nonsensitive; second, the characteristic history of each prior to the onset of the present condition; and third, the cases were studied so thoroughly as to eliminate any possibility of their being of an allergic type.

I noted with interest the results of treatment with autogenous and mixed stock respiratory vaccine in that it was comparative with the results of other workers. In our own work we noted that one could obtain equally as good results with the stock respiratory vaccine as with the autogenous.

The results of treatment of these cases are interesting, and the percentage of results is greater than seen in the average clinic. We are not in accord with the writers that at least 70 per cent of the cases of infectious bronchitis and asthma are amenable to vaccine therapy, but do agree with them that the failures are the result of subsequent changes in the lung parenchyma.

I do not agree with Doctor Rowe in his discussion that there are, perhaps, in among this group a number of food allergy individuals, as the histories are so clear-cut and the symptoms so definite and the findings so typical of a nonallergic infectious bronchitis and bronchial asthma.

✽

DOCTOR VOORSANGER (Closing).—Answering Doctor Rowe, we wish to state that our present study deals with bacterial-sensitive asthmatics and does not mention the large group sensitive to proteins and foods. We grant the existence of food allergy, but are not discussing it in this paper; in fact we thought our procedure, which was most careful and painstaking, excluded this group.

Doctor Piness has very clearly stressed our main point, that in most of our cases there is a previous infectious history. He states, however, that he is not "in accord with the writers, that at least 70 per cent of the cases of infectious bronchitis and asthma are

amenable to vaccine therapy, etc." Our statement gave 22.7 per cent as well and 40.9 per cent as improved, a total of 63.6 per cent, which we feel are amenable to a vaccine. This means that the larger number, although improved, still have symptoms.

In the main we must all agree that the careful observation of asthmatic and bronchitic symptoms following any acute infection is important to prevent, if possible, changes in the lung parenchyma. If we can treat these patients early, before such changes take place, we may do much toward preventing chronic pulmonary disease.

THE LURE OF MEDICAL HISTORY

WILLIAM CHARLES WELLS

By WILLIAM DOCK, M. D.
San Francisco

THE men who contributed to the rapid advance of science in the late seventeenth and early eighteenth centuries are notable for their versatility and the broad scope of their interests. John Hunter, Franklin, Lavoisier, Rumford, and Thomas Young, each showed capacity in various fields. William Charles Wells was such a searcher for facts, whose studies covered a multitude of subjects, but his cross-grained personality and his failure to make known his findings reduced their value and eclipsed his worth.

Wells was born in South Carolina in 1757, but his parents were Scotch and his education, from the ages of eleven to fifteen, and eighteen to twenty-one, was in Dumfries and Edinburgh. He spent the three years between these dates working for a Charleston physician, and after completing his Edinburgh studies stopped a short time in London, listening to William Hunter, then went as an army surgeon to Holland, where his quarrels with superiors soon led to his resignation. At Leyden he worked on his thesis, *De Frigore*, and after receiving his Edinburgh M.D. he returned to Charleston in 1780. His Tory family soon fled to Florida, where he ran the paper, was captain of volunteers, actor and theatrical manager for the plays to amuse his fellow refugees. With return of peace he went to Charleston, only to be jailed for three months in a civil suit, and again he left for Florida, then Paris, and finally, in 1785, he started to practice in London.

He records that his debts, seven hundred and fifty dollars when he began practice, increased to three thousand dollars in ten years. For several years he scarcely received a fee, but after ten years in practice he was collecting twelve hundred dollars a year, and was able, gradually, to pay off all his debts, although his income never rose over twenty-two hundred dollars. Through this time his life was austere and his circle of friends, though distinguished, was limited to five men. Of these Matthew Baillie, the greatest physician of the time, was one of the warmest. In 1812 Wells developed "hydrothorax," the condition which we now recognize as auricular fibrillation, and from this he suffered until his death in 1817. He remarked of himself,

"By principle a constitutional Tory, but my manners, I should think, would lead most persons to regard me a republican."

Wells early entered the Royal Society; but even the sponsorship of Pitcairn and Baillie was inadequate to make him a Fellow of the Royal College of Physicians. The college banned any who had ever worked as apothecaries, general practitioners, or accoucheurs, and was sadly political in its organization. Wells protested against its abuses in a letter to Lord Kenyon, and later, when Baillie again urged him to accept a Fellowship, he declined. The college, founded in 1518, required its fellows to be "profound, sad, discreet, groundedly learned, and deeply studied in physic." Wells had all the qualifications except the third.

Wells' most widely known work, and one which was reprinted often and included in many medical texts, was his "Essay on Dew," which was awarded the Rumford medal. From observations made in his own garden with crude instruments, he had correctly evaluated the importance of radiation of heat from the objects on which dew condensed, and established the facts of dew formation. His essay was curtly dismissed by Thomas Young in the *Quarterly Review*, and this added another source of sorrow to the unhappy invalid who had carried out his studies on dew in spite of his ill health. His first studies on vision were published in 1792, and he continued his interest in this subject, making important observations on the optical axis, convergence, pupillary changes during accommodation, and on the effect of belladonna on the pupils and on accommodation. He described a case of total alopecia, and one of chloasma. In connection with the latter he made some observations on the immunity of negroes to certain diseases, and to the analogy between the improvement of domestic animals by selection and the development of varieties of man by a similar mechanism of nature. What was done for animals artificially "seems to be done with equal efficiency though more slowly, by nature, in the formation of varieties of mankind, fitted for the country which they inhabit. Of the accidental varieties of man, which would occur among the first scattered inhabitants, some one would be better fitted than the others to bear the diseases of the country. This race would multiply, while the others would decrease, and as the darkest would be the best fitted for the (African) climate, at length become the most prevalent, if not the only race." Darwin regarded this observation of Wells' as the "first recognition of the principle of natural selection."

Of the case reports made by Wells those on the infectiousness of erysipelas, on unusual complications of thoracic aneurysm, and one on epilepsy and hemiplegia due to a traumatic cranial lesion, and improved by removal of a button of bone with a spike projecting into the dura, are of some interest. His most important medical contributions concern rheumatic endocarditis and dropsy. He recorded several cases illustrating the relation between rheumatic fever and heart disease, a fact previously noted by Pitcairn and

Baillie, but neglected for some years after Wells' report. He also recognized the causal relationship between scarlet fever and dropsy. This also had been noted previously, but he brought out the curious time relation—an interval of sixteen to twenty-five days elapsing between the onset of the fever and the appearance of dropsy. He found that serum and red cells were excreted in the urine of these dropsical patients. Extending his studies to dropsies not associated with scarlatina, Wells confirmed Cruikshank's observations of the frequent presence of serum in the urine, and the occasional presence of blood. He roughly measured the amount of serum, using both heat and nitric acid as precipitants, and found that albuminuria in certain cases persisted for years after the dropsy had disappeared and the patient been restored to health. He noted hard small kidneys with contracted cortical layers in a few patients who came to section, but most of his one hundred and fifty patients recovered. The importance of mercurial treatment as a cause of albuminuria was noted by Wells, but he did not realize that dropsy was due to renal disease, and considered that in scarlatinal cases it was due to peritoneal irritation. Blackall, who observed these same facts independently, also failed to anticipate Bright's correlation of renal disease and albuminuria, though both knew that the latter did not occur in health and even in the absence of dropsy was evidence of disease.

Wells had no personal following, rapidly was lost to view in medical literature, and his work scarcely influenced progress. A generation later American physicians, with misguided patriotism, began to advertise this difficult Scot as an "American pioneer." In fact, he was American neither in education nor by choice, but was born in a Crown colony and lived in England. The circumstances of his life were melancholy, but the man who first accurately stated the importance of natural selection in biological evolution, who gave the explanation of dew formation, and who first realized the significance of albuminuria deserves a passing notice among the brilliant thinkers of his day. He has already received as eloquent praise as any man can offer, and I close with some quotations from the 1850 address of Professor Elisha Bartlett, of Louisville:

"What a beautiful phenomenon is that of Dew! As soon as the diminishing rays of the declining sun allow the surface of the earth to lose something of its noontide heat, this silent distillation from the great alembic of the atmosphere begins; and through the evening and the morning twilight, and the serene watches of the night, every leaf of the forest, every blade of grass, and every flower of the field, gathers its beaded and transparent gems, to glitter like flashing diamonds, and to be exhaled like auroral incense in the rays of the early sun. And as if to give to this phenomenon an especial and particular beauty, it is witnessed only under cloudless heavens and in still nights; when the winds are hushed, and the stars are shining in the sky. What a delicious element would be lost from the manifold charm

and glory of a summer dawn, if there was no dew on the grass and the flowers! And how would the breath of Aurora be robbed of its fragrance, and her roses of their freshness and their bloom!

"This handiwork of Doctor Wells still stands as he left it—not like the colossal calculus of Newton, holding in its stupendous embrace, alike the light dust on the balance, and the infinite universe of worlds; but, nevertheless, finished, faultless, and entire—compact and perfect in itself—graceful and imperishable as one of the granite obelisks of the Nile, resting its basis on the solid earth, and lifting its apex high toward the heavens. As long as the earth in her annual circuit round the sun proclaims, in the music of the spheres, the name of Galileo; as long as the glory of Newton is set with the rainbow in the firmament; as long as the fame of Harvey is spoken by every throb of the beating heart; as long as the lightning flashes forth from horizon to horizon the great discovery of Franklin, so long shall the hoarfrost and the dew, as through winter and summer, in each still and starry night, they gather and sparkle over all the broad surface of the earth, upon hedgerows and fences, upon mountain and valley, upon field and forest and meadow, upon cottage roof and temple dome, keep green and unfading the name and the memory of William Charles Wells."

Stanford University School of Medicine.

CLINICAL NOTES AND CASE REPORTS

EXTENSIVE IMPAIRMENTS FROM MINOR EAR LESIONS*

REPORT OF CASES

By EUGENE R. LEWIS, M.D.
Los Angeles

WHEN one is confronted with a problem of marked impairment of function involving one of the special senses, more particularly hearing, it is well to attempt its solution along the simplest and most direct avenue of approach. It sometimes happens that a very marked hearing defect, existing over a period of years, turns out to have been due to a cause easily removable. Cerumen impaction, undiscovered for a long time, may become responsible for effects totally disproportionate to its seriousness—or rather, its nonseriousness. Tubotympanic impairment of hearing may come in time to be dignified by apprehensions and misconceptions as to its import, commensurate only with the length of time of its existence. The direct avenue of approach to diagnosis and the courage of convictions as to the soundness of diagnostic reasoning may be rewarded by results little short of miraculous to the patient. Of late it has seemed the vogue to draw the curtain and expose one's glaring mis-

* Read before the Eye, Ear, Nose, and Throat Section of the California Medical Association at the Fifty-Eighth Annual Session, May 6-9, 1929.

takes to the pitiless sunlight of candid confession. The writer vicariously follows this vogue by withdrawing the curtain from the following four cases.

REPORT OF CASES

CASE 1.—D. S., age 52. Railroad division superintendent. Previous history of ordinary health up to two or three years prior to the events here recited. He developed, successively: cough, nervousness, loss of appetite, loss of weight, indigestion, insomnia. Through the railroad medical department a diagnosis of incipient tuberculosis was made. He gave up his position, sold his home, and completed arrangements to remove his family to a tuberculosis community in Arizona. The symptoms of gradually increasing hardness of hearing and tinnitus for two years brought him under the observation of the writer. Impacted cerumen was discovered and removed, whereupon his cough, nervousness, insomnia, and indigestion disappeared; he regained his lost weight and strength and became as well and strong as ever. If tubercle bacilli had been found in the sputum during his low period of general physical condition, they disappeared with his improvement. The railroad ultimately installed him in another town as division superintendent, and his health has remained excellent for ten years after this recovery.

CASE 2.—J. V. R., age 91. Five years previous he had sustained a head injury in an automobile collision. Owing to his advanced age, what would not have proved a serious physical damage to a younger person apparently had effected considerable degree of concussion. He had continuous tinnitus and vague sense of vertigo, preventing his customary automobile riding and restricting his social intercourse very seriously. Five years after the onset of these so-called concussion symptoms, the writer discovered impacted cerumen in his right ear which had been deaf since early childhood. Removal of this cerumen was followed by immediate cessation of the symptoms which had been attributed to concussion. He has recently passed his ninety-third birthday without return of his symptoms. The cerumen had undoubtedly been jarred against the membrana tympani by the accident, contributing to the general results of his injury the pressure symptoms which set up the tinnitus lasting for five years.

CASE 3.—Mrs. E. A. S., age 64. General health good. For eight years her hearing had been growing steadily worse, until she had been compelled to give up church, theaters, lectures, and, during the last year, teas, bridge parties, and other social gatherings. She had consulted otologists in New York, in the Middle West, in the Northwest, and in California; she had undergone courses of vibrations, inflations, and other treatment, and had used an otomassage machine at home. Weber not lateralized, bone conduction longer than the writer's, tragus test indicated nonfixation, high tones 2.5/9 on the right, 2.7/9 on the left, tubal catheterization showed very high degree of obstruction, air conduction time 2/30 right, 2/30 left. Moderate nonobstructive septal irregularity, completely buried tonsils (she had been told she had no tonsils), and two molars showed advanced apical infection. She was advised to have the affected teeth and her tonsils removed, and then to undergo three to six months of general systemic fluid alkalization and iodization. Following the removal of her teeth and tonsils she returned to her home in the Northwest. Seven weeks later, after following the outlined treatment rigidly, she reported as follows: "I have had my hearing so long now, I almost forget those sad days when I could not hear. When I first returned home I had to open the door of the grandfather clock and listen closely. Now I can hear it chime and strike the hour even when I am upstairs with my bedroom door closed. About the second week in May I had a very severe headache, lasting over two days. During that

time I suffered with nausea, and in the midst of the upheaval my hearing came back suddenly and completely. I was actually too weak to talk about it, but I was very happy and very thankful that first morning when I could hear the birds sing again, and all the other noises of the street came to me so distinctly. There has been no recurrence of the deafness, and there is no roaring in my head though my blood pressure is still too high." This improvement occurred five years ago, since which time she has reported every year, only to confirm the permanence of the result. (Since writing this the patient has been seen twice, each time confirming the former findings of good hearing.)

CASE 4.—E. R., age 27. Following influenza in October, patient had double otitis media; free myringotomy and copious pus discharge from both ears. Discharge and profound hearing impairment continued despite consecutive treatment for four months, during which repeated enlargements of tympanic membrane incisions were made. Simple mastoid operation was recommended, but refused. In February both mastoids were x-rayed, showing generally dark, no distinct destruction of intercellular lamellae. In March patient came under my care, was put on alternating weeks of alkalization and dilute hydrochloric acid, with daily fluid intake of one glass of fluid per hour while awake. Hot fomentations twenty minutes three times daily, and one-half per cent silver nitrate per catheter into the tympanum. In ten days the right ear had ceased discharging and the perforation closed; in fifteen days the left ear ceased discharging and perforation closed. Restoration of hearing succeeded upon the closure of the perforations after a few inflations.

The above cases point out some major effects from relatively minor causes, and indicate the importance of bearing in mind the possibility of an unexpectedly easy solution of some apparently very difficult problems.

1154 Roosevelt Building.

ADRENALIN AS A CLINICAL TEST OF INFECTION AND GANGRENE OF THE SCALP

REPORT OF CASE

By MONTROSE T. BURROWS, M. D.
Pasadena

THE following case history is submitted.

History.—Patient, a man, age seventy-seven, well nourished, moderately vigorous, became bald over the whole of the top of his head forty years ago. He has a fairly good fringe of hair over the back and the sides of his head. His heart loses one beat out of every ten or twelve, otherwise it is regular. There are no murmurs, and the heart dullness does not extend beyond the nipple line nor is the heart demonstrably enlarged to the right. The chest is barrel-shaped. Lungs are clear except for slight emphysema. Abdomen is symmetrical. Spleen is not felt. The liver dullness is one and one-half fingers breadth below the costal margin. The abdominal wall contains considerable fat but there are no scars. Eyes react to light and accommodation: K K normal. There is a moderate amount of pyorrhea and a few defects in the teeth. X-rays show no dead teeth nor abscesses. Aside from his present complaint he has no serious troubles excepting slight constipation off and on, and a slight pain at times in his left leg. Only in recent years has he had to get up at nights to urinate. The prostate is slightly enlarged and nodular. His blood pressure is 127/80.

Laboratory Examinations.—Urine shows a trace of indican and a few mucous shreds. Its specific gravity

is 1027 and it is acid in reaction. There is no albumin, sugar nor acetone. The red blood count is 5,360,000; white blood count, 9600; and hemoglobin is 85.8 per cent by the Newcomer method. The differential blood count shows polymorphonuclear neutrophils, 55 per cent; eosinophils, 4 per cent; basophils, 1 per cent; lymphocytes, 36 per cent; large mononuclears, 3 per cent; and transitionals, 1 per cent. Wassermann and Kahn tests were negative.

Complaint.—Several years ago he fell on the ice, bruising the top of his head severely. He has also suffered with dandruff, itching, and pimples on his head for many years. During the early part of September of last year he noticed a rather large red pimple on the posterior part of the top of his head, just to the right of the middle line. This grew slowly larger and a scab formed. Three other red raised areas appeared and persisted. One was on the back of his head, one on the front and left side and one on the right side near the middle. These latter three have never ulcerated.

When the one with a scab failed to heal he went to a physician in Paris who treated it with silver nitrate and called it a "corn." Later in the same month he was treated by a physician in Switzerland. This physician also used a liquid medicine and told him the lesion was not a serious one. In spite of this treatment the lesion grew larger and in New York on November 15, 1928, it was treated with radium needles for forty-five minutes.

When he was seen by the writer on February 25, 1929, he was suffering from a lesion the size of a quarter of a dollar on the posterior part of the top of his head. This lesion was slightly raised and covered with a scab which was perforated at several points. Pus oozed through these perforations. The lesion was limited to the soft tissues. The scalp moved freely over the skull. While the lesion had the appearance of an infection it was not possible to rule out a diagnosis of epithelioma.

The whole of the bald parts of his head was covered with thin, small yellowish scales. There were also the three slightly raised red areas described above and the skin was thin, atrophic and peeling over both temples. In the hair behind and above the right ear was a small raised keratosis. His hair was gray but the scalp in the area covered by hair was clean.

Treatment.—The larger ulcerative lesion was excised on March 2, 1929, after a preliminary biopsy which showed us to be dealing with a chronic inflammatory lesion in which there was beginning gangrene. Novocain one-half per cent with a trace of adrenalin was used for anesthetic.

The skin incision was made one centimeter beyond the margins of the ulcer and was carried just to the galea aponeurosis. The loosened flap was peeled clean of this aponeurosis and it carried the entire lesion with it. Three actively bleeding points were encountered at points A₁, and A₂, and A₃, respectively, in Fig. 1. Pressure clamping and an adrenalin pledget failed to stop the hemorrhage and it was necessary to ligate these three points.

Clean granulations quickly filled the whole of the area except at the points of the ligatures A₂ and A₃. A small amount of pus was noted at A₁, but this apparently disappeared after a few days. A dirty necrotic slough with pus developed about A₂ and A₃. This slough spread rapidly and refused to respond to any medical treatment. It was removed, therefore, with a piece of the neighboring skin and superficial fascia and again it was found necessary to ligate the vessels B₁ and B₂ (Fig. 1) in order to stop the hemorrhage.

Again, as before, clean granulation filled the central area while rapidly spreading infection with necrosis appeared about the points of ligature B₁ and B₂. A third area of skin was then removed, March 18, 1929, as noted in Fig. 1. While bleeding vessels were again encountered, this hemorrhage was quickly controlled completely by the application of adrenalin

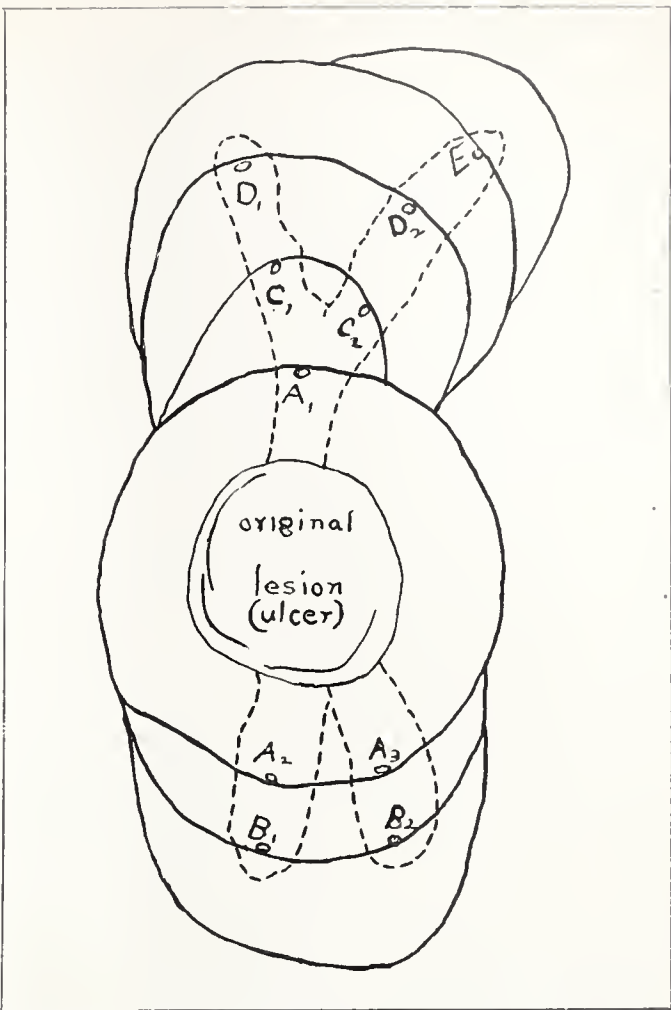


Fig. 1.—Shows relation of original ulcer and extensions to operative procedure. Extensions of the lesion into deeper tissues along the blood vessels is shown by dotted lines. Heavy lines indicate sites of skin incisions and include the pieces of skin removed at each operation. The letters indicate the sites where ligatures were placed.

solution 1-1000 for only a minute or so. Clean granulation then quickly filled the remaining area and Thiersch grafts were laid over the wound on March 28, 1929.

The dressing covering these grafts was removed after eight days and at this time a slough was present at the point of the ligation of the artery A₁. A layer of skin and superficial fascia was removed with this area of slough, April 8, 1929. It was necessary to ligate two vessels C₁ and C₂. Slough formed at both points of ligatures. Another layer of skin and fascia was removed April 11, 1929. Two more ligatures had to be placed, one at D₁ and one at D₂. Slough formed at each place and a third layer was removed April 18, 1929. At this time all hemorrhage was readily controlled with adrenalin excepting about the artery E, in Fig. 1. A slough slowly formed at this point and a fourth piece of skin and fascia was removed April 30, 1929.

In spite of the fact that we were passing at each of these latter operations from the smaller to the larger branches of the temporal artery, all hemorrhage was readily controlled by adrenalin and pressure in the last operative area.

Clean granulation then finally filled the whole area and it was covered with Thiersch grafts. No areas of infection were noted when the dressing covering these grafts was removed, ten days later. A recent letter from the patient in New York and one from Dr. Burton S. Lee, July 2, 1929, tells me that the whole lesion has healed very well.

PATHOLOGY

The pathology of the lesions in this case was interesting. Grossly one could see no change in the scalp except the original ulcer and the sloughs

forming about the ligated vessels. The microscopic sections alone revealed the true state and extent of the lesion. Sections through the original ulcer showed the epidermis greatly thickened at the edge of the ulcer. The sweat glands and hair follicles were either atrophied or degenerating. The sebaceous glands were present beyond the inflammatory zone and were hypertrophic. The derm and superficial fascia throughout the whole of this region was densely infiltrated with mononuclear cells. The fibrous tissue was increased and there were very few blood vessels. The larger arteries and veins were present but they were empty of blood. Their media stained poorly. Their adventitial coats were infiltrated with round cells and the endothelial layers of many were greatly thickened. Beneath the epidermis were numerous abscesses filled with normally staining and degenerating polymorphonuclear cells. Numerous sections taken from various pieces of tissue removed at operation showed this intense cellulitis extended out in the deeper portions of the superficial fascia, as indicated by the dotted lines in Fig. 1. The derm and superficial fascia was not involved in this region beyond the ulcer except for a few areas of round-cell infiltration. The inflammation followed the larger arteries. The fibrous tissue of the superficial fascia was thickened and hyaline in many places. It was infiltrated everywhere with scattered polymorphonuclear cells and a few small round cells. The arteries showed marked changes. Their adventitial coats were infiltrated with cells. Their medial coats stained poorly and their endothelial linings were thickened in many places to layers as much as five cells in thickness.

Sections taken at the points of ligation of the arteries showed that they had become necrotic and the tissue about was undergoing gangrenous changes.

COMMENTS

We were dealing in this case with a chronic cellulitis in an old infected scalp which had become complicated by radium treatment. The arteries for a wide area about this lesion had suffered severe changes and there was an extension of the lesion along these vessels.

I report this case not only because of the unusual character of the lesion, but also because it was not possible to see the extent of this lesion or to note the arterial changes at the time of operation. This was due to the fact that the blood vessels are small in this region and the lesion was diffuse and deep-seated. It was not until we had performed several operations that we appreciated that we could follow these areas of infection by the failure of the arteries to respond to adrenalin.

Having once appreciated this simple adrenalin test it was easy in the last operation to remove the skin well beyond the area of infection and to obtain immediate healing. That diseased arteries will not respond to adrenalin has been known for many years. I report this case here only to em-

phasize the use of adrenalin in such cases. The test may be of use not only in similar cases but also in the treatment of many radium and x-ray burns where arterial changes are largely responsible for the failure to heal.

94 North Madison Avenue.

A LIGHTED KELLY ANOSCOPE

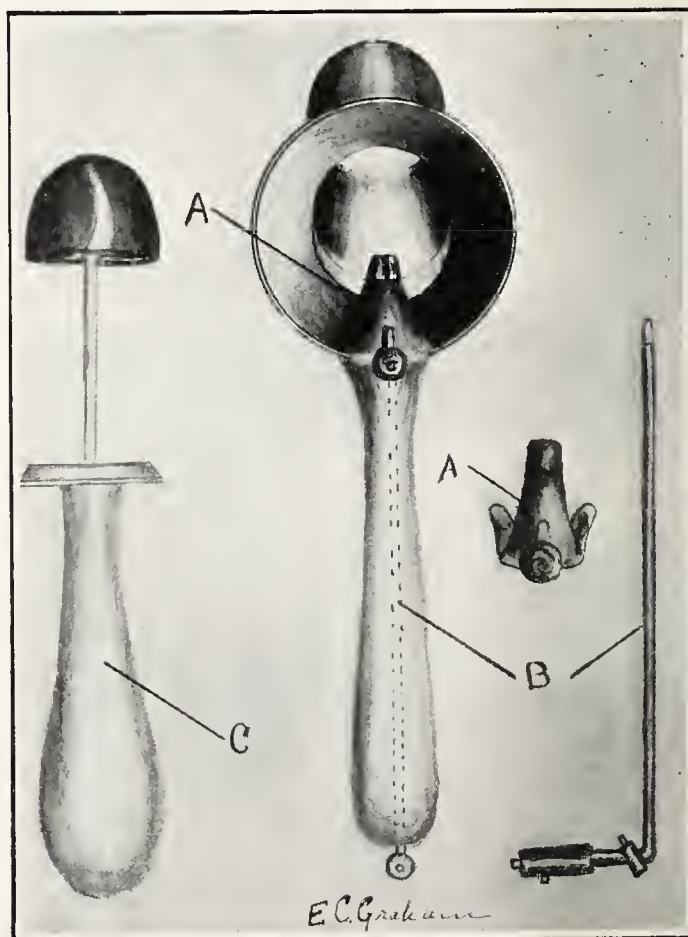
By M. S. WOOLF, M. D.
San Francisco

THE treatment of hemorrhoids by injection demands a good view of the interior of the anal canal and lower rectum and working space. A nonfenestrated instrument allows all the hemorrhoids to present at one time and does not require rotating. The wide external mouth of the Kelly anoscope, carrying a light which is reflected onto the hemorrhoids, permits injections easily, however ill the room be illuminated. The accompanying diagram represents a Kelly anoscope fitted with a light carrier (B) which passes through the handle, its terminal light being projected into the rectum by a small reflector (A). This fits on the rim of the instrument adjacent to the handle.

The instrument with obturator (C) is first inserted in the ordinary way, and the light carrier and reflector adjusted after the obturator has been removed.

These modifications were arranged for me by the Electrosurgical Instrument Company, Rochester, New York.

384 Post Street.



Lighted Kelly Anoscope.

BEDSIDE MEDICINE FOR BEDSIDE DOCTORS

An open forum for brief discussions of the workaday problems of the bedside doctor. Suggestions for subjects for discussion invited.

EPIDERMOMYCOSIS

H. J. TEMPLETON, OAKLAND.—Epidermomycosis, "the newer ringworm" as Weidman calls it, is becoming extremely prevalent. Especially is this true in those who use the shower baths, swimming pools, gymnasiums of athletic clubs, secondary schools, and universities. In such places the bare feet come in contact with the infected floors and the disease is spread from patient to patient.

The extreme prevalence of this infection may be judged from its occurrence among the students of the University of California. Working with funds obtained from the Research Committee, Dr. Robert Legge, university physician, in collaboration with Lee Bonar and H. J. Templeton,* has found that over one-half of the entering freshmen have been infected prior to their entry into the university. These same students were examined later after having been exposed to gymnasium environment for two semesters. Comparison of one group which worked in an ideal gymnasium with another group which worked under less favorable sanitary conditions proved that the hygiene of the gymnasium is an extremely important factor in the control of ringworm of the feet. Thus, in men working amidst unfavorable sanitary surroundings the incidence arose 25.3 per cent while in the women who worked in an ideal new gymnasium the increase was only 2 per cent.†

The feet are the parts most frequently involved. Sodden macerated areas appear between the toes; vesicles may appear between or on the toes to spread later to other areas on the feet; groups of deep-seated vesicles may appear on the soles, especially under the arch of the foot, or other rarer forms may sometimes appear. Most of the cases which were formerly classified as "eczema" of the toes are now known to be ringworm. Many cases of vesicular dermatitis of the hands are due to the same infection. Ringworm of the groin, vulgarly known as "jock strap itch," is fairly common.

The one most important prophylactic measure in the control of this problem would seem to be rigid enforcement of a rule prohibiting bare feet from ever touching the floor. This can be accomplished by the use of rubber slippers. Gymnasiums should be so constructed as to have adequate sunshine and ventilation, for darkness and dampness are favorable to growth of the causative fungi. The floors, runways, and shower

baths should be cleansed frequently and there should be no depressions in which water can stagnate.

Individual hygiene is important. The feet should be bathed frequently, stockings should be changed daily, and shoes should be light in weight. It would be advantageous to alternate in the use of several pairs of shoes and to keep those not in use in an airy, dry place. Dusting powdered sulphur into the shoes which are not in use probably sterilizes them to some degree.

Treatment is far from being satisfactory, but much can be accomplished by persistence. The time-honored remedy, Whitfield's ointment, is of great value, but should not be used in the extremely acute cases where a marked dermatitis is present. It works best in the hyperkeratotic and interdigital varieties. The acute vesicular variety and the acutely eczematous type generally do well with a 1-7000 potassium permanganate soak. When there is considerable oozing, Lassar's paste, containing 5 per cent of ammoniated mercury, works well. Other valuable remedies are thymol 1 per cent in half strength Whitfield's ointment, gentian violet (5 per cent in 30 per cent alcohol), ultra-violet light, and, in selected cases, x-ray.

* * *

LAURENCE R. TAUSSIG, SAN FRANCISCO.—During the past few years much has been published concerning tinea infection of the hands and feet, and the profession has become familiar with its various phases. In spite of the amount of interest that has been displayed in this problem, both in the research laboratory and in the clinic, there still remains a large number of points on which our information is decidedly imperfect. Mitchell recently pointed out that there is a group of nonmycotic lesions which clinically closely resemble those caused by ringworm. He insisted that one should not classify an eruption as dermatophytosis unless fungi are demonstrated at one time or another either by the microscopic examination of scales or by culture. This demonstration is often easy, particularly in the form that involves the interdigital spaces of the toes, but is apt to require frequent and painstaking examination.

In the earlier literature the chief point stressed was the clinical and mycological diagnosis, but more recently the treatment has received more attention. For a time Whitfield's ointment or a modification of this was almost universally prescribed. In the chronic and subacute stages it is a very satisfactory treatment, but in the acute, vesicular type it is liable to cause an exacerbation and should be prescribed with caution. It is usually safer to treat these eruptions as one would

* Ringworm of the Feet. Robert T. Legge, in collaboration with Lee Bonar and H. J. Templeton, *Jour. A. M. A.*, May 4, 1929, vol. xcii, p. 1507.

† Incidence of Foot Ringworm Among College Students—Its Relation to Gymnasium Hygiene. Robert T. Legge; Lee Bonar; H. J. Templeton, *Jour. A. M. A.*, July 20, 1929, vol. xciii, p. 170.

treat an acute eczema; potassium permanganate soaks or aluminum acetate compresses in the acute stage, crude coal-tar ointment in the sub-acute stages, reserving Whitfield's ointment, preferably half strength, for the chronic forms. Resistant forms are helped by ultra-violet light or fractional doses of x-ray. Various dyes have been tried and by some writers highly recommended. Mercurochrome especially, either in a water solution or in the acetone and alcohol solution, has many adherents, but my own experience has been disappointing. Thymol and the essential oils are at times helpful. Chrysarobin is of value if it does not prove too irritating. This drug is particularly useful in combating that most stubborn phase, the involvement of the nails.

At times the only method of curing tinea of the nails is to remove them surgically. A very disturbing circumstance is the frequent recurrence of the infection after apparent cure. In an effort to prevent this, patients are advised to continue the use of a parasiticide for some time after a clinical cure, but even this does not guarantee immunity. The question as to whether there is true reinfection from without or whether the spores remain inactive in the skin awaiting favorable conditions, is not as yet definitely answered. White and others believe that reinfection occurs from socks, shoes, and slippers. They point out that the spores are not killed by ordinary laundering and advise exposure to the sun as the most satisfactory disinfecting method. Another group of dermatologists have demonstrated spores from around the nails in apparently cured cases and maintain that this is the most common source of reinfection. Probably both types occur. Weidman has pointed out that in some individuals an apparent immunity to these infections is present and his work suggests the possibility of the presence of a saprophyte such as *Bacillus prodigiosus* being responsible for this immunity.

* * *

MOSES SCHOLTZ, LOS ANGELES.—From the point of view of the clinician the name "epidermomycosis" is much more acceptable than "tenia" or trichophytosis" as it simply designates the general conception of fungus or mycotic infection without specifying any species which may vary in different cases.

The clinical problem of epidermomycosis is steadily increasing in importance both from a clinical and medico-social point of view. Its wide dissemination and invasion of all classes of society raises it to the degree of an epidemic, if not a pandemic. It can be rightly called a disease of civilization, as it is originated and perpetuated by various incidentals of our daily mode of living, such as footwear, wool and flannel socks and underwear, rugs, floors, swimming pools, clubs, etc.

To utilize best a discussion limited within allotted space I shall emphasize merely the salient points of importance to the general practitioner.

1. The persistence of the condition is due not to the lack of specific local drugs at our command but to the ease of reinfection either from outside,

or from those parts of the patient's body which escape attention or receive insufficient treatment.

2. Therefore utmost thoroughness, system and persistence in local attention is a *sine qua non* condition for a clinical cure of epidermomycosis.

3. Clinical diagnosis can be made in the overwhelming majority of cases on morphologic features and the clinical behavior of the lesions. Well defined, discrete lesions with scaly circinate borders and epidermal collarette, lack of solid diffuse eczematous infiltration and predominance of marginal desquamation with or without a clearing center are seldom absent and can be regarded as clinical earmarks of epidermomycosis whether it is of vesicular, scaly, or keratotic type. Microscopic and cultural confirmation is desirable, but is not feasible in a majority of cases.

4. Differential diagnosis is to be made from vesicular and squamous eczema, psoriasis, lues and dermatitis venenata. Secondary pyogenic infection often overshadows, disguises and conceals the underlying primary condition of epidermomycosis.

5. The common sites of predilection of epidermomycosis—the interdigital spaces, palmar and plantar surfaces, genitocrural and axillar spaces—always should be examined and all infected surfaces treated, as any one of these locations, if overlooked, may serve as incubator, for reinfection.

6. As to the treatment there is no single specific remedy, but there are a large number of effective antizymotic applications. Whitfield ointment is not a specific, but simply one of the rational and effective combinations. Many similar combinations can and should be made by the individual clinician from a large selection of available antizymotics, such as sulphur, thymol, resorcin, mercury, formaldehyd, betanaphthol, iodine, chrysarobin, etc.

7. The keynote of therapeutic success is the individualization of local treatment. Acute, highly inflammatory types call for soothing and astringent applications. Sluggish and chronic cases call for active, stimulating, concentrated and peeling drugs. No standard formula or prescription should be used for a given case without consideration as to whether its strength and composition suit the requirements of this individual case. Exudative vesicular or desquamating, keratotic or pus-infected cases of epidermomycosis require entirely different methods of handling and different types of local applications.

8. Actinotherapy, in the form of quartz lamp and carbon arc, graded according to the acuteness of the case, is helpful in all cases, particularly in the last stages after apparent clinical cure, for the purpose of sterilization of the skin to prevent recurrence.

9. X-ray is of much more limited value in the treatment of epidermomycosis. Admittedly it has no fungicidal effect and should be used only in selected chronic cases, namely, in those with secondary eczematization, in weekly fractional

doses of one-sixth to one-fourth skin unit, and merely as a supplement to other measures.

In my experience, cases which involve the groins and axillae are the most responsive, less so cases involving interdigital spaces while the plantar and palmar cases are the most stubborn.

With intelligent coöperation of the patient only exceptional cases will prove refractory and intractable. Prognosis for final cure is good, although a three to six-month period may be necessary.

* * *

E. D. LOVEJOY, LOS ANGELES.—In the years previous to the war we used to see occasional cases of what was called eczema or tinea; those occurring on the lateral aspect of the feet usually went under the former name, those involving the groin or axilla under the latter. Since the war and the return of the men from France there has been a rapid spread of the disease, and laboratory workers have now demonstrated the cause to be a fungus belonging in most cases to the Epidermophyton group. And Mitchell has lately demonstrated a group of lesions of a nonmycotic origin which produce the same symptoms. So, like many of our dermatological diseases, epidermomycosis is a faulty nomenclature.

The condition is now present in almost epidemic form. A review of the patients leads to the conclusion that the disease is selective as to age and partly as to sex and without doubt certain individuals carry some immunity. The vast majority of cases occur in young male adults and, to less extent, in women of corresponding years. There is no doubt that locker rooms and public shower baths, etc., serve as a distributing factor. Skin friction and softening seem necessary before the fungus may be liberated from its location under the upper layer of dead skin and spread to other individuals. Walking on sand, sea and tank soaking tend to remove this upper layer of dead skin and so liberate the fungi. This explains in a large measure the comparative infrequency of familial infections, even where the use of a family bath mat or rug might be expected to spread the disease. Recently we demonstrated this in a physician who had an infection quite extensive between the toes of both feet which had been present some five or six years undiagnosed by him. After he was put on treatment and the upper layer of the skin began to peel, his wife promptly became infected, but fortunately was cleared up rapidly before there was time for much penetration.

The methods necessary to prevent further spreading of the infection seem impossible of accomplishment by guarding the individual patient, since most of them, after a certain amount of treatment has relieved the itching and annoying symptoms, do not take sufficient care. Athletic clubs, and semiprivate pools and showers could have the floors sterilized by antiseptics. In one club an infection broke out among the members using the gymnasium and was traced to the wrestling mat; a new canvas cover plus individual treatment put an end to the outbreak. However, the majority of public bathhouses and locker

rooms take no care and require much active persuasion to make them take any precautions.

Treatment is various, and recurrences are, alas, only too frequent, so that many a mild case treated over quite a period is still a source of infection.

Whether any immunity is established in the skin following a cure has not as yet been ascertained, but it is rather doubtful, although certain individuals appear to have a natural immunity which appears to be some chemical substance contained in the sweat.

A Rising Cancer Rate.—The most recent government statistics for 1925 indicate that the cancer death rate per hundred thousand population in the registration states of 1900 has increased from 60.7 to 92.8. This involves a definite question concerning the real or apparent increase of the disease.

It is significant that the cancer mortality in 1910 shows definite variations according to the decade during which death occurs. Improvement in diagnosis, the agitation for early operations, the stress upon prophylaxis have been most potent during the past fifteen years. It is proper to inquire into the results of the cumulative propaganda.

It is noteworthy that there has been a falling off of the mortality rates for children under five years of age. There has been practically no change in the mortality rate for children under fourteen years of age. From the fifteenth year on the gains in cancer mortality are noticeable. In the decade thirty-five to forty-four years the rate jumped from 60.5 in 1910 to 64.2 in 1925, approximately an increase of only 6 per cent. During the decade forty-five to fifty-four years there is a rise from 167.8 to 185.7, an increase of 12 per cent. From fifty-five to sixty-four years it rose from 342.6 to 534.9, an increase of 55 per cent; from sixty-five to seventy-four years the rate advanced from 559.2 to 825.6, a gain of approximately 50 per cent. For seventy-five years and over, it changed from 791.6 to 1138.3, nearly 42 per cent. It is evident that the death rate from cancer is especially increasing after age thirty-five years and now reaches its peak during the decade fifty-five to sixty-four years.—*American Medicine*, August 1929.

Smallpox—In Two States.—Dr. Robert H. Riley, director of the Maryland State Department of Health, states in his departmental *Press Bulletin No. 263*:

"Our Maryland law requires the vaccination of young children, preferably in infancy, but positively before they are enrolled in school. Before they enter school the responsibility rests upon the parents. If for any reason the parents have failed to have it done by the time their child reaches school age, the teachers have no choice in the matter, but under the State law, have to exclude the child from school until it is done. Furthermore, the law provides that a teacher who enrolls an unvaccinated child shall be fined ten dollars for each and every offense."

It is possible to show by a simple comparison that this law is somewhat effective. Ohio has no compulsory vaccination law; Ohio has, however, as even an utter stranger might assume by glancing at the neat little figures below, some few highly intelligent anti-vaccinationists, and, incidentally, quite some smallpox cases. Here is the record:

	Maryland cases	Ohio cases
1924	97	5,597
1925	16	4,018
1926	5	2,133
1927	9	1,558
1928	22	1,236
1929 (to June).....	8	1,091
	157	15,633

Proper comment in regard to these figures, if made by an Ohio physician, probably would not be printed—or printable; any other is inadequate.—*Ohio Health News*, October 1, 1929.

very important announcement that the California Medical Association, through its officers, is actively engaged in the work of seeking remedies for some of the defects which now exist. The attention of every member of the California Medical Association is called to the action taken at the last annual session in May 1929, at San Diego, when the House of Delegates adopted a resolution, instructing and giving the Council power to act in the investigation and promotion of measures which would bring about a betterment of the conditions having to do with sickness and injury, and in which the professional and economic interests of the laity and members of the medical profession were involved.

In pursuance of those instructions, the Council, through its Executive Committee and affiliated bodies has been making such a study.

* * *

A Tentative Plan Under Consideration.—It is very gratifying to know that one plan roughly mapped out by Dr. Walter Coffey of San Francisco, presents some constructive innovations quite different from any thus far brought forward, and has features which appeal very much to many members of the Council of the California Medical Association. It is too early to discuss the plan in detail, because as yet it is simply looked upon as a desirable working basis for the further study of a problem which sooner or later must be more or less solved.

Here, in California, some very important changes are taking place in relation to medical practice which has to do with the care of industrial employees and their families. Individual members of the Association are cautioned in this connection to avoid making contracts (under these new laws) because the Council has in mind the institution of certain measures which aim at the conservation of the interests of all members rather than of only a few members of the California Medical Association.

* * *

County Societies Should Have Programs Dealing With State Medicine.—The members of the medical profession have interests which are very much involved whenever the care of the many thousands of lay citizens, whose average annual income is less than \$2500, comes into consideration. It is the physicians themselves who will be called upon to bear the brunt of defects in any plan put into operation under the leadership of either laymen or physicians. Physicians, therefore, have a very just right to make a thorough study of the many issues at stake.

All measures which would create important changes in present methods of private and industrial practice in California are of paramount interest to the majority of members of the California Medical Association. The proper solution of the problems involved makes it desirable that every member of the California Medical Asso-

ciation should give some time to a perusal and consideration of the literature on state medicine, and on the evils of the system and on how best they might be prevented in any other plan that might be adopted. In the near future, the Program Committee of each component county society may, to good advantage, have a number of papers on the legal, ethical, economic, social and scientific aspects of state medicine.

* * *

Doctor Coffey's Plan.—The plan proposed by Doctor Coffey would permit the care of industrial employees and their families to continue as at present, without serious interference with the medical practice methods now in vogue. The patient would choose his own physician from among those members of the California Medical Association who had stated they were willing to give medical and surgical services to the group of citizens coming under a certain industrial and income classification which would be outlined. The statements for services would be sent not to the patients but to a central organization or office which, as trustee, would collect the bills and make repayment to the attending physicians. The money which would pay for services which were rendered would be collected through a monthly deduction on the wages of the employees, and would be turned over to the Association by the employers. In the plan under consideration the interests of all members of the California Medical Association would be safeguarded. If that or some other method is not put into operation, the bulk of this practice may drift into the hands of lay or other companies which will come into existence to care for this type of work. In due time, as the plan develops, the officers of the California Medical Association will send information to the component county societies.

* * *

Every member of the California Medical Association who has suggestions to offer in these matters is cordially invited to send such to the central office of the Association so that the same may be given consideration. A letter of invitation to this effect, by order of the Executive Committee of the California Medical Association, has already been sent to each of the county medical societies in California so that the officers of the county units may be on the alert in making up their meeting programs.

INCORPORATION OF C. M. A.—NEW CONSTITUTION AND BY-LAWS

Incorporation Was Carefully Considered.—In this column in previous issues, some of the reasons for the incorporation of the California Medical Association were indicated. It was stated that the plan to incorporate had been carefully studied and repeatedly discussed at Council meetings over a period of more than three years; and that the recommendation to incorporate, which was presented at the last annual session at

San Diego had been adopted by the House of Delegates without a single dissenting vote.

Emphasis was laid on the fact that a two-thirds vote of the entire membership of the California Medical Association was necessary if the legal requirements for the formation of a corporation in California were to be fulfilled.

Members were urged to send in their ballots promptly so that prior to December 1, 1929 a more than two-thirds vote would be a matter of official record.

It was stated that incorporation would place no more responsibilities or obligations on our members, one to the other, than exist under our present system. The possibilities for greater progress, which incorporation of the California Medical Association would make possible, were also indicated.

The officers of the Association have not been surprised at the slowness with which the ballots have come in. Your officers realized that many members would promptly vote, but that a large number would wish to consider the matter further before sending in their ballots. In practice that meant that in many cases the ballots would be put aside on the desks of busy physicians, to meet the fate that so often comes to such intentions, namely, that of being overlooked or forgotten.

These comments are again made in order to urge every member of the Association who has not yet voted, to find his ballot and reply envelope, and to promptly mail the ballot to the new address of the California Medical Association at Four Fifty Sutter, Room 2004, San Francisco.

* * *

Do Not Fail to Vote on Incorporation.—In union there is strength. Through coöperative effort of members, greater results can be secured for the California Medical Association. Each individual member of the California Medical Association has his rights, but at the same time each individual member has his membership duties and obligations. To exercise his right of suffrage, either for or against, on so important a matter as this of incorporation is one of the duties and obligations that cannot be delegated to other colleagues or officers. It must be done by each individual member after the procedure prescribed by the laws of California. Every member should vote.

To repeat, if you have not yet voted, and your eyes catch these lines, then by all means look up your ballot, mark it to express your wishes, put it in the reply envelope and promptly mail.

* * *

Constitution and By-Laws.—Before or about the time this issue of CALIFORNIA AND WESTERN MEDICINE reaches you, it is hoped that a copy of the new constitution and by-laws which was adopted at the San Diego annual session in May last, will have been placed on the desk of every member of the California Medical Association.

An inspection of the leaflet will reveal to you that the typographical make-up is very different from the deadening and uninteresting printed form of the usual run of by-laws. The special committee in charge of the printing has spared no effort in order to carry out the instructions of the Council and to so arrange the printing and index that the constitution and by-laws reprint would be understandable and easy of reference to all who were sufficiently interested to scan its pages.

As has been so often stated, organized medicine as we nonsectarian physicians understand it, works through our national, state, and component county medical societies. Organized medicine through those institutions safeguards both the public health and the interests and standards of the medical profession. It behooves each of us, as members of such a profession, to know somewhat of the rules of government of the organizations which protect our individual interests, while we give almost our entire time to professional service to our lay fellows.

You are urged, therefore, at some time when you are in the mood, to study this new constitution and by-laws. Such a survey will give to every reader a better orientation as to the bigness of the problems and of the responsibilities of organized medicine in California, and of the methods which, with the passing of years, have been brought into being in order to better attain the standards and aims to which we are committed.

LICENSURE PROBLEMS IN CALIFORNIA

Present Medical Practice Act Is a Patchwork. The Medical Practice Act of California, like that of most of the states, is a patchwork. At almost every legislative session in recent years there have been proposed, or have come into being, amendments which have been based largely on experiences with the many problems which the members of the Board of Examiners are called upon to solve. The strongest proponents of the present Medical Practice Act of California would not contend that some of its provisions could not be put into better form. Its critics believe consideration might well be given to a goodly number of what seem to be desirable changes so that action thereon might be had through initiative or legislative action.

* * *

Digest of Present Medical Law as Printed in the State Medical Directory.—Every member of the California Medical Association receives the *Directory of Physicians and Surgeons, Naturopaths, Drugless Practitioners, Chiropodists, Midwives* published by the Board of Medical Examiners. The 1929 edition of that publication on page 10 prints a digest of the Medical Practice Act as it is, with the exception of the amendments passed by the California legislature in the spring of this year. Members who are sufficiently interested and who wish to scan the entire Medical

Practice Act of California can find the same in the *American Medical Directory*, eleventh edition, 1929, page 177.

* * *

House of Delegates Authorizes a Study of the Medical Practice Act.—At the 1929 annual session of the California Medical Association at San Diego the Council was authorized to appoint a special committee to study the present Medical Practice Act and basic science acts and report thereon (see CALIFORNIA AND WESTERN MEDICINE, June 1929, page 437). At the last meeting of the Council, held in Los Angeles on September 28, 1929, the committee was appointed.

It was felt that such a study should include not only the law with all its various provisions as it now stands, but should also consider changes, deletions or additions thereto. The committee report should also recommend whether or not a proposed new medical practice act should be submitted to the next legislature, which will convene in January 1931, or whether a new medical practice act and a possible basic science law should be submitted for an initiative vote by the citizens of California in the state election which will be held in the fall of 1930.

Every member of the Association who has opinions or suggestions bearing on the Medical Practice Act of California or on a possible basic science act, is requested to put the same in writing, and to forward the same to the secretary of the Association so that the special committee may take the same into consideration.

The California Medical Association is the great and powerful organization which stands behind the California Board of Medical Examiners in its efforts to protect the public health through maintenance of standards of practice, and by insistence that illegal and incompetent persons shall not be permitted to hold themselves before the public as competent practitioners of the healing art.

The members of the California Medical Association, all of whom have secured licenses to practice in California, should maintain an active interest in the state laws having to do with such licensure.

If our present Medical Practice Act can be improved, to the mutual advantage of the lay public and of the medical profession, then there would seem to be no reason why such changes should not be considered; and if deemed advisable, suitable amendments and changes should be prepared and advocated. If the Medical Practice Act, as it reads, is as good as can be desired, then a conclusion to that effect would also be worth the while.

A thorough study of the entire licensure problem cannot be other than advantageous to all concerned. As the work continues, the subject will be further discussed in CALIFORNIA AND WESTERN MEDICINE.

WOMAN'S AUXILIARY OF THE C. M. A.

The Woman's Auxiliary Movement.—Several years ago the wives and sisters of some physicians who had become interested in certain social problems then confronting the medical profession formed an organization known as a Woman's Auxiliary. The movement received the endorsement of the American Medical Association, and its state medical units were urged to bring into being state auxiliaries, which in turn would be made up of county auxiliaries. The plan of organization was modeled after that of the American Medical Association, with national, state, and county units.

In some of the states, as in Texas for instance, the Woman's Auxiliary during the last few years has been able to be of great service as a contact organization between organized medicine and lay organizations; and through its good work has given a real reason for its existence.

* * *

The California Woman's Auxiliary.—In California the movement for a Woman's Auxiliary took a tangible form at this year's annual session at San Diego, when an initial organization was formed. The minutes of the organization meeting were printed in CALIFORNIA AND WESTERN MEDICINE of July 1929, page 68. The officers there listed will be glad to cooperate with local groups desiring to form auxiliaries, and correspondence in regard thereto is invited.

The California Woman's Auxiliary, as formed at San Diego, is to exist only until the county woman's auxiliaries, which it is hoped will be organized prior to next year's annual session, begin to function in regular form. The underlying principles and by-laws for the California Woman's Auxiliary were printed in the article previously referred to.

A perusal of the rules laid down by the Council will show that the interests of the profession and of the lay public have been constantly kept in mind. A county woman's auxiliary working along legitimate lines can be of real aid and service, both to the profession and to the laity. The members of such an auxiliary can maintain contacts and promote interests and activities vitally concerned with the public health, and can do work for which busy physicians only rarely can spare the time.

* * *

How to Organize a County Woman's Auxiliary. The formation of a county woman's auxiliary should not be difficult for any group that is interested. The following procedure could be observed.

Through a special committee appointed by the secretary of a county medical society, an invitation can be sent to a group of eligible women who are known to have an interest in cooperative endeavor along these lines.

At the meeting so held, a motion can be made to organize, adopting as the by-laws the rules

printed on page 68 of the July 1929 issue of CALIFORNIA AND WESTERN MEDICINE.

Officers therein provided for should then be elected. These officers can then proceed to enlarge their organization along the lines in vogue in county auxiliaries in other states, concerning which information is given in the national publication of the Woman's Auxiliaries. Mrs. George H. Hoxie is the president of the National Woman's Auxiliary. Her address is 3719 Pennsylvania Avenue, Kansas City, Missouri. The national organization has printed an interesting leaflet on "Some Facts Concerning the Woman's Auxiliary of the American Medical Association," for which request should be made.

It is hoped that in May 1930, at the Del Monte annual session, the parent body, which came into existence at San Diego last May, can sponsor the regular state organization of the auxiliary through the representatives of the county woman's auxiliaries in California which it is felt should be in existence by that time.

With proper coöperation by the officers of county medical societies in California, the woman's auxiliary movement should be well launched before the next annual session. The movement is also commended to the consideration of our Nevada and Utah colleagues.

TO WHAT EXTENT SHOULD THE USE OF THE M. D. DEGREE BE CIRCUMSCRIBED?

A Letter From Professor A. W. Meyer of Stanford.—In the correspondence column of the Miscellany Department of this issue of CALIFORNIA AND WESTERN MEDICINE is a letter from Professor A. W. Meyer, head of the department of anatomy of Stanford University School of Medicine. In his communication he discusses certain presumable limitations in the use of the degree of M. D. by holders of that degree who are not licensed to practice in California.

Professor Meyer, who received his own M. D. degree from Johns Hopkins University in 1905, was licensed to practice in Maryland, but has been in California for many years as chief of the department of anatomy at Stanford. The catalogue of that university, which is a public document, has always printed his name with his M. D. degree. Readers of this journal may remember his article on "The Pelvic Floor—Considerations Regarding Its Anatomy and Mechanics," which appeared in the December 1927 issue of CALIFORNIA AND WESTERN MEDICINE.

It may not be out of place to also call attention to the fact that the California Medical Association, in its constitution, makes provision for "associate membership" for colleagues who, like Doctor Meyer, are located in California and who are engaged in teaching or public health work, but who do not engage in the private practice of medicine in the state. Such graduates of medicine are therefore looked upon as colleagues in good standing by the members of the organized medical profession.

Issues as Outlined in Letters and in Section 17 of the Medical Practice Act.—With the letter which is printed in the correspondence column, Doctor Meyer also enclosed several letters which passed between himself and Doctor Percy T. Phillips and Dr. C. B. Pinkham, respectively president and secretary of the Board of Medical Examiners of the State of California. Some excerpts from several of these which bear on the matters under discussion are also printed in the correspondence column in this number of CALIFORNIA AND WESTERN MEDICINE.

To understand the issues which are discussed it is necessary to read the letters referred to. Some other points which are worthy of consideration are outlined below.

First of all it is well to understand that Section 17 of the Medical Practice Act, which is quoted in Doctor Meyer's letter, came into existence because some such provision was necessary in order to safeguard the public health. Its primary aim was to provide a law which would penalize those who held themselves before the California public as practicing M. D.'s when they had no such legal right.

* * *

Law Primarily Not Intended to Apply to Men Like Doctor Meyer.—It should be quite evident that the law was not brought into being to reach or penalize men like Doctor Meyer, who hold proper doctorate of medicine degrees and who, because of institutional or other work, are more or less transient residents in California. Men like Doctor Meyer who are not licensed and who do not engage in private practice cannot in any sense be construed to menace the interests of the lay public or of the medical profession.

Nevertheless the law as it is actually worded could be easily interpreted to apply to men like Doctor Meyer, even though we believe such was not its fundamental purpose. The California Board of Medical Examiners, if Doctor Pinkham is correct, evidently believes that the law does apply to Doctor Meyer. Doctor Meyer, on the other hand (and he writes that his opinion is shared by men of prominence in the legal profession) holds that Section 17 does not legally apply to him.

Expressing our own personal opinion, we are free to confess that because of the loose wording of Section 17 there would seem to be some merit in both contentions. However, we incline somewhat more to the viewpoint of Doctor Meyer than we do to that of the board, as interpreted by Doctor Pinkham.

* * *

Council of California Medical Association Might Well Consider this Law.—Would not this law be a very good matter for consideration by the Council of the California Medical Association and by the Committee on Public Policy of the Association? If the fault be in loose phraseology, why not amend Section 17 so that it will serve its real objects without subjecting to embarrassment honorable and esteemed members of the medical profession who hold M. D. degrees, who do not

engage in medical practice for monetary emoluments, even though they do not hold licenses to practice in California. Or what is very much worse than subjecting such graduates to mere embarrassment, of notifying them of their violation of a law with an implied threat of arrest and punishment for commission of a misdemeanor.

What good would come from such a proceeding? How would the public health interests of California be promoted, or the best interests of the medical profession subserved through such a spectacle? Would not such a course lower the medical profession in the eyes of many of the laity and in the end do more harm than good to the interests of the public health and of medical standards?

* * *

State Medical Board Has Much Work of Greater Importance.—Is it not proper to ask why our State Medical Board should take so seriously to heart these isolated cases which debatably might be said to violate the letter of the law as expounded in Section 17 of the Medical Practice Act? All citizens know that there are many laws on the statute books for which legitimate exceptions are constantly being made. Indeed, it has been affirmed by prominent members of the legal profession and it is generally accepted that not one of us goes through a day's work in the world at large without breaking some local, municipal, state, or federal law.

So far as the Medical Practice Act of California is concerned, why not busy ourselves with its real and major violations, putting aside the questionable or red tape or literal enforcements for consideration at such time when our house having been fully set in order, we can discuss such minor matters or technical violations and then decide what course of action would best serve the public good?

All around us are not a handful, but tens and hundreds of practitioners of the cultist groups who are busily engaged in practice. Adhering to such groups, in fashion similar to some of our own parasitic infestations, are many, many persons who, without let or hindrance, seemingly ply the practice of the healing art more or less illegally. With a multitude of such more or less illegal practitioners of all beliefs in operation throughout California, why go out of our way and use up energy that could be put to better service to annoy those who are of us and with us, even though not licensed to practice, who do not engage in practice, but who have received the degree of M. D. from acceptable institutions, and who would seem to have a very proper right not to be obliged to conceal from the world that they legitimately earned that degree?

Before going after this last group of persons, why not ask ourselves how Section 17 can be altered? The English language is not so scant or obscure in its meanings that such an effort should be unsuccessful. All that is needed is to first make clear in our own minds just what ends the law, as given in Section 17, should serve, and then

to write the law in clear English so that those ends would be attained.

If we were to give a bit of friendly advice to our hard-working and esteemed colleagues on the California Board of Medical Examiners it would be to take the Doctor Meyer and similar cases under consideration; and at the same time consider how Section 17 should be changed in order to better carry out its real purposes. If the decision was reached that certain changes seemed desirable, then it stands to reason that for the present, men like Doctor Meyer should not be bothered by special agents of the Board of Medical Examiners. There is altogether too much other and more important work to be done.

Napoleon's Last Illness.—Three accounts of the postmortem appearances are in existence: the official one drawn up and signed by the British doctors; a semi-official one written by Henry in 1823; and that of Antommarchi on behalf of himself and the French representatives.

The official report states:

"A trifling adhesion of the left pleura to the pleura costalis was found, about three ounces of reddish fluid were contained in the left cavity, and nearly eight ounces in the right. The lungs were quite sound. The pericardium was natural, and contained about an ounce of fluid. The heart was of the natural size, but thickly covered with fat; the auricles and ventricles exhibited nothing extraordinary, except that the muscular parts appeared rather paler than natural. Upon opening the abdomen, the omentum was found remarkably fat, and on exposing the stomach, that viscus was found the seat of extensive disease; strong adhesions connected the whole superior surface particularly about the pyloric extremity, to the concave surface of the left lobe of the liver; and on separating these an ulcer which penetrated the coats of the stomach was discovered one inch from the pylorus, sufficient to allow the passage of the little finger. The internal surface of the stomach to nearly its whole extent was a mass of cancerous disease, or scirrhus portions advancing to cancer; this was particularly noticed near the pylorus. The cardiac extremity for a small space near the termination of the esophagus, was the only part appearing in a healthy state. The stomach was found nearly filled with a large quantity of fluid, resembling coffee grounds. The convex surface of the left lobe of the liver adhered to the diaphragm but with the exception of the adhesions occasioned by the disease in the stomach, no unhealthy appearance presented itself in the liver. The remainder of the abdominal viscera were in a healthy state. A slight peculiarity in the formation of the left kidney was observed."

(Signed) SHORTT, ARNOTT, BURTON,
LIVINGSTONE, MITCHELL.

It is curious to note that Francesco Antommarchi found what he termed tuberculous excavation and tubercles in the left lung whereas Arnott, who was present at the autopsy, indicates that the lungs were normal. All of the symptoms of Napoleon's last illness consequently clearly point to a gastric origin and the autopsy definitely proved that a carcinoma with perforation was the cause of death.

Professor De Paoli who has made extensive researches into the cause and circumstances of the death of Napoleon I, on the necropsy, on the previous hereditary diseases of the Bonaparte family, and on the conditions of Napoleon's health during the years of his greatest activity, finds that the postmortem would seem to justify the conclusion that the cause of his death, as in the case of his father, was cancer of the stomach, and that tuberculosis constituted a contributory cause.—*Physicians' Times Magazine*, September 1929.

MEDICINE TODAY

Current comment on medical progress, discussion of selected topics from recent books or periodic literature, by contributing members. Every member of the California Medical Association is invited to submit discussion suitable for publication in this department. No discussion should be over five hundred words in length.

The "Crystalloid Frog."—Many puzzling phenomena in theoretical and practical medicine depend for their interpretation on a determination of the relative rôle of fixed-tissues and body fluids. Such determinations have heretofore been attempted solely with isolated organs and tissues. A technique applicable to the whole animal has been recently tested.

Kritschewski and Friede¹ perfused frogs free from recognizable blood, and performed tests on the resulting "crystalloid frogs," Locke's solution being the usual blood substitute. Control crystalloid frogs remain alive for from four to ten days. They report the production of fatal anaphylaxis in crystalloid hypersensitive frogs, with no recognizable anaphylactic reaction in normal crystalloid controls.

W. H. MANWARING, Stanford University.

REFERENCE

1. Kritschewski, I. L., and Friede, K. A.: *Zeitschr. f. Immunitätsf.*, vol. 50, p. 489, 1927.

Ophthalmology

Phlyctenular Keratitis.—Phlyctenular keratitis (eczematous, scrofulous or strumous keratitis) is a common disease of the eyes, especially in childhood, and is characterized by the development of a phlyctenule on the cornea. The phlyctenule is usually situated near the limbus and consists of a collection of round cells beneath the epithelium, which is elevated. The phlyctenule varies in size from a poppy seed to a millet seed and changes in color from gray to yellow in a few hours. It soon bursts, leaving a small ulcer. There may be only one phlyctenule affecting one eye or there may be six or eight on each cornea. If the ulceration is superficial, very little scar tissue is left and this usually disappears entirely in a few months. On the other hand, if the ulceration becomes deep and spreads, as it frequently does, a deep, dense scar develops or a perforation of the cornea occurs, allowing a prolapse of the iris. These ulcerations may occur in the pupillary area, seriously impairing vision because of the resulting scars. Blood vessels may come in from the limbus, producing a fascicular keratitis.

Phlyctenular keratitis is accompanied by photophobia, blepharospasm and increased lachrymation. It should not be difficult to diagnose, as about the only thing it might become confused with is an interstitial keratitis, which can easily

be eliminated, as the cornea at no time stains in interstitial keratitis.

These cases of phlyctenular keratitis should be considered serious from the standpoint of vision and treated vigorously to prevent the formation of scars and possible perforation. The corneal inflammation is only a manifestation of a systemic condition; the underlying cause, in the great majority of cases, is an active tuberculosis. As these patients are undernourished and come from unhygienic surroundings, most of them have hypertrophied tonsils and adenoids and many of them have some form of sinus disease, which is manifested by a running nose and an eczema around the nostrils.

Local treatment to the eye consists of a full dilatation of the pupil with atropin, keeping the pupil thoroughly dilated until the sclera becomes white.

Constitutional Treatment. Each patient should have a thorough physical examination by a competent tuberculosis specialist and should receive the same constitutional treatment as if affected with tuberculosis: that is, change of surroundings, fresh air and sunshine, nourishing food, clearing up of all foci of infection, such as removal of tonsils and adenoids. In other words, everything possible should be done to build up a child's resistance. If an active tuberculous lesion is demonstrated, it frequently recovers rapidly under a tuberculin treatment.

WILLIAM A. BOYCE, Los Angeles.

Tuberculosis

The So-Called Filterable Tuberculosis Virus.—Calmette¹ and his coworkers recently claimed that Fontes' "hypothesis" stated in 1910, regarding the filterability of the tuberculosis virus, has been substantiated. Likewise, denial is made that such observations may be due to faulty technique as suggested by Cooper and Petroff.² Evidently, decisive conclusions cannot be drawn at present from the peculiar lesions and the irregular occurrence of acid-fast bacilli following inoculations with filtrates of tubercle bacilli cultures. Pertinent to such discussion are the studies of Eberson³ of the Medical School and the George Williams Hooper Foundation for Medical Research of the University of California, with toxic filtrates of the tubercle bacillus and the apparent identification of a skin-reacting substance present in sera from tuberculous patients and animals. This author did not find tubercles or acid-fast bacilli in the tissues or the lymph nodes of guinea pigs despite the injection of considerable amounts of filtered material. Further-

more, tests for viability of tubercle bacilli that might have escaped detection in the lymph nodes resulted negatively when suspensions of such nodes were repeatedly transplanted in series of other normal animals. The phenomenon of the production of specific tuberculous antibodies with filtrates is explained by Eberson on the basis of allergy to a toxic substance liberated by the tubercle culture.

The earlier literature by Pickert and Löwenstein⁴ and shortly afterward by White and collaborators⁵ and Fischer⁶ apparently serve to confirm the views of Eberson. These investigators commented on practically similar observations as to the behavior of tuberculosis serum and its augmenting effect on skin reactions in tuberculous patients. Recently, Schilling and Hockenthal⁷ offered evidence as to the hypersensitiveness to the serums of tuberculous patients.

In discussing filterability of the tuberculosis virus the question of types of filter may not be without some significance. However, there is additional interesting evidence in favor of the existence of a toxic substance rather than a special filterable intermediate form of tubercle bacilli. Noteworthy are the studies of Preisich and Heim,⁸ Heymans,⁹ Moussu,¹⁰ and Zieler,¹¹ who showed that specific tuberculous reactions could be elicited in nontuberculous animals with dialyzable materials when collodion sacs containing living tubercle bacilli were inserted into body cavities or tissues of rabbits, guinea pigs, sheep, goats and cattle. Needless to state, careful controls were made on the permeability of the sacs and their intact condition throughout the experiments. Most illuminating was the fact that tuberculoid structures could be produced without localized tuberculous infection.

It is reasonable to believe that the typical histologic picture of the tubercle is not to be explained solely by the action of the bacillary bodies of the tubercle bacillus. Zieler found for example that the B. E., or bacillus emulsion, gave the weakest histologic reaction of all types of O. T. used, despite the presence of bacillary particles, and furthermore noted most profound tissue changes after the use of dialyzable substances obtained from the tubercle bacillus. That soluble materials are definitely capable of producing tuberculoid structures seems established. The recent studies with lipoid and phosphatid derivatives of tuberculin by Eberson¹² and similar preparations of the tubercle bacillus by Goris,¹³ Nègre and Boquet,¹⁴ and subsequently Anderson¹⁵ have added further confirmation of the hitherto suspected but untested properties of the so-called tuberculosis virus.

FREDERICK EBERSON, San Francisco.

REFERENCES

1. Calmette, A., Valtis, J., and Saenz, A.: *Journ. Am. Med. Assn.*, 1929, 92, 2086.
2. Cooper, F. B., and Petroff, S. A.: *Journ. Inf. Dis.*, 1928, 43, 200.
3. Eberson, F.: *Proc. Soc. Exp. Biol. and Med.*, 1927, 24, 329; *Am. Rev. of Tuberc.*, 1927, 15, 127;

Proc. Soc. Exp. Biol. and Med., 1927, 25, 80; *Journ. Am. Med. Assn.*, 1928, 90, 260.

4. Pickert, M., and Löwenstein, E.: *Deutsch. Med. Wchnschr.*, 1928, 34, 2262.

5. White, W. C., and Graham, D. A. L.; White, W. C. and van Norman, K. H.; *Journ. Med. Res.*, 1909, 21, 261; 1910, 6, 449.

6. Fischer, C.: *Ztschr. f. Tuberk.*, 1923, 38, 81.

7. Schilling, C., and Hockenthal, H.: *Deutsch. Med. Wchnschr.*, 1926, 52, 1373.

8. Preisich and Heim: *Zentralbl. f. Bakteriolog.*, 1902, Orig. 31, 712.

9. Heymans: *Acad. de Méd. de Blg. Séance du 31, XII, 1904; Sémin. méd.*, 1905, 25, 9.

10. Moussu: *Compt. rend. Acad. des Sc. de l'Acad. des Sciences*, 1907, 22, 952.

11. Zieler, K.: *Arch. Dermat. und Syph.*, 1910, 102, 37.

12. Eberson, F.: *Proc. Soc. Exp. Biol. and Med.*, 1925, 22, 346; *Am. Rev. of Tuberc.*, 1926, 13, 454; *Proc. Soc. Exp. Biol. and Med.*, 1927, 24, 802; *Am. Rev. of Tuberc.*, 1929, 19, 327.

13. Goris, A.: *Ann. de l'Inst. Pasteur*, 1920, 34, 49.

14. Nègre, L. and Boquet, A.: *Compt. rend. Soc. de Biol.*, 1922, 86, 653, 717.

15. Anderson, R. J.: *Journ. Biol. Chem.*, 1927, 74, 525; 1929, 83, 169.

Neuropsychiatry

New Views as to Epilepsy.—Convulsive seizures arise from many causes and require thorough investigation to attach them to a definite pathology. The large number of fits which cannot be so attached we group together under the name of "essential epilepsy."

Recent studies on epilepsy by Fay¹ and by Lennox and Cobb² present some new conceptions which merit serious consideration.

Fay has noticed, as have other surgeons, that when a convulsion comes on while a brain is exposed during operation the cortex becomes intensely congested and there is great increase of subarachnoid and sometimes of supra-arachnoid fluid, and he has seen the convulsion brought to an immediate close by the evacuation of this fluid.

Investigations carried on under his direction have disclosed, in epileptics, changes in the pachionian bodies which would impair their function as filters through which the cerebrospinal fluid is drained into the venous sinuses. He urges that the water intake exercises a decisive influence upon the production of the cerebrospinal fluid, whose accumulation in excess, over the cortex, is apt to contribute to the production of convulsive seizures in the predisposed. In suitably controlled cases he has been able greatly to reduce or entirely suppress convulsive seizures by dehydration. He reduced the daily water intake to between 240 cubic centimeters and 600 cubic centimeters which his patients took for long periods without bad results.

Lennox and Cobb discuss the physicochemical factors involved in the production of convulsive seizures, under the following theses:

1. "Acidosis tends to inhibit, alkalosis to augment seizures."

Acidosis may be induced: (a) By fasting or by a diet rich in fat and poor in carbohydrates.

(b) By ingestion of acids or acid-forming salts.
 (c) Through vigorous physical exercises. (d) Temporarily, by increasing the CO_2 , by rebreathing, or inhaling air containing a high percentage of CO_2 .

2. "An increased tension of oxygen in the tissues tends to inhibit, decreased tension to augment, seizures."

3. "Edema of the brain tends to increase, dehydration to decrease, seizures."

The combination of increased intracranial pressure, anoxemia, and alkalosis will almost surely bring on a fit in one predisposed, but other physicochemical processes may modify the convulsive tendency, and alteration of the chemical constituents of the body fluids plays a part; for instance, increase of chlorid and decrease of ionized calcium and glucose in the blood seem to contribute toward seizures.

The observations of Fay seem to confirm some older views as to the value of removing excess of fluid accumulated in the brain membranes in epilepsy. He is, however, conservative in his operative measures and prefers withdrawing excess of fluid through spinal puncture as far as possible. He also makes small trephine holes and aspirates what cannot be reached by the former method. He does not favor extensive decompressions.

The physicochemical considerations presented by Lennox and Cobb give support to the ketogenic diet of Peterman and offer what may prove valuable suggestions as to treatment, especially of the dreaded *status epilepticus*, in which it should be practicable to administer inhalations of air rich in oxygen and carbonic acid which are now available in most places of any size.

CHARLES LEWIS ALLEN,
 Los Angeles.

REFERENCES

1. Fay, Temple: Mechanical Theory of Epilepsy, Am. J. Psychiat., 1929, No. 5 (March).
2. Lennox, W. G., and Cobb, Stanley: Relation of Physicochemical Processes to Epileptiform Seizures, Am. J. Psychiat., 1929, No. 5 (March).
3. Lennox, W. G., and Cobb, Stanley: Epilepsy From the Standpoint of Physiology and Treatment, Williams and Wilkins Co., Baltimore, 1928.

Medicine in Soviet Russia.—Dr. Ralph A. Reynolds, retired president of the American Medical Association of Vienna, on his return from Soviet Russia told the New York *Herald Tribune* that he had visited a large number of clinics in Moscow and Leningrad. Under the socialist system every worker is insured, and when he gets ill the insurance not only pays the full wage during the time of disablement but also the hospital expense.

An institution which has no parallel abroad is the night sanatorium for workers who are in a poor physical condition. These workers, instead of going home when their working hours are over, pass the remainder of the day and the night in the sanatorium. They get a shower and are put to bed for an hour, then do physical culture exercises after which they may occupy themselves as they like until bedtime, which is fixed at an early hour. They are also served a special diet. Only on Sundays are they allowed to leave for their homes. Such a "cure" generally lasts two months. In Moscow there are twenty-four night sanatoria, ten of which are for tuberculosis suspects.

There are 156 day nurseries in Moscow alone, each of them near a big factory. The average attendance is 125 children. To instil the spirit of sovietism at an early age pictures of Lenin as a babe decorate the walls.

The medical service is public. Everybody is entitled to free treatment. About 140 physicians are on duty at a Moscow clinic, and from thirty to forty doctors are detailed to at-home service during the night hours. As private practice is abolished anyone taken ill or meeting with an accident during the night telephones to the nearest clinic and is taken care of.

Village clinics have been distributed so that each clinic serves a population of 15,000. In the more sparsely populated districts this means that many people are more than fifty miles from a doctor. It is difficult to win the uncultured peasant class to modern ideas of hygiene; conditions in the open country are still appalling.

The Russian Government spends money lavishly on modern instruments and other equipment. Funds are always available for research work and propaganda, but the salaries of doctors are small and cannot compare with what a professor or a practitioner can earn in other countries. Physicians of high standing get about a hundred dollars a month and have to be contented with a miserable home of one or three rooms with a kitchen that is often shared by as many as six families. The idea is that a doctor's home should not be so good as the class of homes given to Communist skilled workers who form the aristocratic class in the Soviet Republic.

As the prospects for the medical students are totally different from what they once were, the class of people who go in for medical studies has undergone considerable change. Only those who support the Soviets enter the medical career. Women students, who, before the war, were 34 per cent are now 55 per cent of those studying medicine. Ninety-seven per cent of all medical students are educated by the government. In return they must go where the government sends them when they have completed their studies. For many this means exile in some out of the way place with great hardships. After having served three years on the post assigned to them they are free to make a choice of their own. They can shorten this three-year period if they accomplish something outstanding. Medical studies take five years in medical school and one year in hospital.

Russian doctors follow the progress of medicine in other countries closely and take over all improvements, but their own scientific research leaves much to be desired. Dr. Reynolds had the impression that the Bolshevik system is becoming firmly entrenched, and that the rulers of Russia have the country well in hand.—Lillian A. Chase.—*Canadian Medical Association Journal*, September 1929.

Find Radium Waters Are Valueless.—Drinking waters supposed to contain radioactive substances have been widely advertised in the past few years as cures for various ills. Today all sorts of radium solutions are offered both to the physician and to the public with loud claims as to their virtue in the treatment of arthritis, neuritis, gout, anemia, leukemia, blackheads, pimples and what have you, according to an editorial in *Hygeia*.

Actually many of these contain insufficient radium to have any appreciable effects. Now, after watching the development of these preparations carefully for several years the Council on Pharmacy and Chemistry of the American Medical Association in a recent report expresses the conviction that the value of radium solutions in the treatment of disease is not demonstrated by dependable evidence. Thus the council dismisses the claims of the promoters with the opinion that even if their products contained radium there is no evidence that they would have any value.—*Hygeia*.

STATE MEDICAL ASSOCIATIONS

CALIFORNIA MEDICAL ASSOCIATION

MORTON R. GIBBONS.....President
LYELL C. KINNEY.....President-Elect
EMMA W. POPE.....Secretary

OFFICIAL NOTICE

Directory Changes.—Every member who expects to change the location of his present office on or soon after the first of January, 1930 should *at this time* furnish the change of address to the state office of the California Medical Association, Room 2004, Four Fifty Sutter, San Francisco.

The directory of the Association is published only once each year—on January 1. If the correct information is not sent in now, erroneous data will be carried throughout the year.

The date of removal should accompany the change of address that no change in the present mailing list will be made until after actual date of removal.

COUNCIL MINUTES

Minutes of the One Hundred and Eighty-First Meeting of the Council of the California Medical Association

Approved at the One Hundred and Eighty-Sixth Meeting of the Council of the California Medical Association, September 28, 1929

Held in the Old Brokers' Office, Hotel del Coronado, Coronado, California, Sunday, May 5, 1929, at 8 p. m.

Present.—Doctors Kiger, Gibbons, Pallette, Kinney, Duffield, Shephard, Coffey, Hamlin, Harris, Rogers, Peers, Kress, Shoemaker, Kelly, Pope, and General Counsel Peart.

Absent.—Doctors Bingaman, DeLappe, Catton, and Curtiss.

1. Call to Order.—The meeting was called to order by the chairman, Oliver D. Hamlin.

2. Report of the Council.—Dr. Oliver D. Hamlin presented the report of the Council for suggestions and amendment before submission to the House of Delegates at its first meeting. A few minor changes in the sections on constitution and redistricting were suggested.

Action by the Council.—On motion of Peers, seconded by Gibbons, and unanimously carried, the following resolution was adopted:

Resolved, That the report of the Council be approved, as amended.

3. Report of the Auditing Committee.—Dr. T. Henshaw Kelly, chairman of the Auditing Committee, presented the report of the Auditing Committee as shown by the audit of accounts of the books of the Association prepared by Hugh Ross, public accountant.

Action by the Council.—On motion of Rogers, seconded by Gibbons, and unanimously carried, the following resolution was adopted:

Resolved, That the report of the Auditing Committee be accepted.

4. Report of the Secretary.—Dr. Emma W. Pope, presented the report of the secretary, outlining the activities of the Association during the past year.

Action by the Council.—On motion of Pallette, seconded by Kelly, and unanimously carried, the following resolution was adopted.

Resolved, That the report of the secretary be approved, as read.

5. Report of the Editors.—The report of the editors, outlining the activities of CALIFORNIA AND WESTERN MEDICINE during 1928, was presented by Dr. George H. Kress.

Action by the Council.—On motion of Harris, seconded by Duffield, and unanimously carried, the following resolution was adopted:

Resolved, That the report of the editors be adopted, as read.

6. Report of the Arrangements Committee.—Mott H. Arnold, chairman of the Arrangements Committee, presented the report of his committee. Doctor Arnold stated that he had met with very kind response from commercial exhibitors and that approximately \$2800 was coming in from that source, of which approximately one-third had been paid. Doctor Arnold stated that the arrangement of having sections meet in the morning was receiving hearty support and he anticipated that this feature would add to the success of the meeting. The coöperation given by the hotel management and various section officers was lauded by Doctor Arnold.

Action by the Council.—On motion of Harris, seconded by Gibbons, and unanimously carried, the following resolution was adopted:

Resolved, That the report of the Arrangements Committee be accepted.

7. Report of the Committee on Scientific Program. Emma W. Pope, chairman of the Committee on Scientific Program, presented the report of the committee.

Action by the Council.—On motion of Kelly, seconded by Rogers, and unanimously carried, the following resolution was adopted:

Resolved, That the report of the Committee on Scientific Program be approved.

8. Delegates to the American Medical Association. The desirability of having one of the delegates to the American Medical Association a member of the Council was discussed. It was felt that a provision should be inserted in the Constitution and By-Laws providing that one delegate should be a member of the Council.

9. Honorary Membership.—Morton R. Gibbons was appointed to draw up resolution recommending the granting of honorary membership to Lucy Wanzer of San Francisco for presentation to the House of Delegates.

10. Thomas W. Huntington.—The question of presenting resolution on the death of Dr. Thomas W. Huntington was discussed.

Action by the Council.—On motion of Gibbons, seconded by Harris, and unanimously carried, the following resolution was adopted:

Resolved, That a committee be appointed to draw up suitable resolution for presentation at the House

of Delegates on the death of Dr. Thomas W. Huntington.

The chairman appointed Doctors Gibbons, Harris, and Coffey as members of the committee.

11. Senate Bill 207, Expert Medical Testimony.—T. Henshaw Kelly reported on the action taken on Senate Bill 207, Expert Medical Testimony, and presented a copy of a suggested telegram to be sent to all members of the Assembly by members of the Council, asking favorable consideration of the Hornblower amendments to the bill. Doctor Kelly then presented a suggested telegram to be addressed to William B. Hornblower commending his action on the bill.

It was the sense of the Council that the telegram to Assemblyman Hornblower be signed by the chairman of the Council, the president of the Association, and the secretary, and that a copy be forwarded to Doctor Catton.

12. Constitution and By-Laws.—Discussion was had of the draft of the proposed Constitution and By-Laws. The general counsel stated that he had gone over the draft and had some suggestions to make. It was felt that this could best be handled by a small group; and on motion of Kiger, seconded by Gibbons, and unanimously carried, the following resolution was adopted:

Resolved, That a Committee on Revision, consisting of Doctors Kress and Kelly and Mr. Peart, be appointed to examine the Constitution and By-Laws and prepare it for submission to the House of Delegates.

13. Order of Business.—It was stated that consideration of the Constitution and By-Laws should take place before the election of officers at the second meeting of the House of Delegates. Upon instruction from the Council the secretary was authorized to secure the approval of members of the Program Committee of a change in the order of business, which would provide for consideration of the Constitution and By-Laws prior to the election of officers.

14. Adjournment.—There being no further business the meeting adjourned to meet at 9 a. m., Monday, May 6, 1929, in the same place.

OLIVER D. HAMLIN, *Chairman.*
EMMA W. POPE, *Secretary.*

* * *

Minutes of the One Hundred and Eighty-Second Meeting of the Council of the California Medical Association

Approved at the One Hundred and Eighty-Sixth Meeting of the Council of the California Medical Association, September 28, 1929

Held in the Old Brokers' Office, Hotel del Coronado, Coronado, California, Monday, May 6, 1929, at 9 a. m.

Present.—Doctors Kiger, Gibbons, Pallette, Kinney, Duffield, Shephard, Coffey, Hamlin, Harris, Rogers, Peers, Shoemaker, Kelly, Curtiss, Pope, and General Counsel Peart.

Absent.—Doctors Bingaman, DeLappe, and Catton.

1. Call to Order.—The meeting was called to order by the chairman, Oliver D. Hamlin.

2. Legislative Committee.—Dr. Harlan Shoemaker, chairman of the Legislative Committee, reported on the activities of his committee giving an outline of all Senate and Assembly bills which had been presented during the present session of the legislature and the action taken thereon.

Doctor Shephard suggested that a copy of the section of the report giving action on the various bills be sent to the councilors so that they could give the men in their districts an idea of the work covered by the Legislative Committee.

Doctors Kress and Kelly entered an objection to that portion of the report regarding coöperation between the various committees and individuals handling legislation, and after discussion it was decided,

with the approval of Doctor Shoemaker, that these remarks should be eliminated from the final report.

Action by the Council.—On motion of Kelly, seconded by Kress, and unanimously carried, the following resolution was adopted:

Resolved, That the report of the Legislative Committee be accepted as modified by the Council.

3. Medical Practice Act Committee.—Dr. George H. Kress presented the final report of the Committee on the Medical Practice Act in which the Medical Practice Act and Basic Science Act were discussed. The report recommended that the California Medical Association go on record as favoring a basic science act and revision of the present Medical Practice Act, to be presented to the people of the State of California through an initiative measure. The report also suggested that the matter be presented to the House of Delegates for consideration.

Action by the Council.—On motion of Kelly, seconded by Duffield, and unanimously carried, the following resolution was adopted:

Resolved, That the report of the Committee on the Medical Practice Act be accepted and the committee be discharged with thanks for the work performed.

The difficulties of putting through an initiative measure were then discussed.

Action by the Council.—On motion of Kress, duly seconded, and unanimously carried, it was

Resolved, That the Council have a resolution prepared along the line of previous comment asking the House of Delegates to go on record as being in favor of the revision of our State Medical Practice Act and the possibility of instituting a basic science act, and that the Council be instructed to make a study of these two matters and submit a prompt report, with power to act.

4. Welfare Committee.—The report of the Welfare Committee, as prepared by Dr. Martha Welpton, chairman, was read by the secretary.

Action by the Council.—On motion of Pallette, seconded by Duffield, and unanimously carried, the following resolution was adopted:

Resolved, That the report of the Welfare Committee be accepted and the committee discharged with thanks for the work performed.

5. Woman's Auxiliary Committee.—Dr. William Duffield, chairman of the Committee on the Woman's Auxiliary, stated that an organization meeting of the Auxiliary had been called for 10 o'clock Wednesday and that he would submit a further report after that meeting.

6. Technical Specialties Committee.—Letter from William Bowman, chairman of the Committee on Technical Specialties, was read by the secretary, in which it was stated that there was no further report from the committee since no new developments had taken place.

7. Offices of the Association.—The secretary stated that through a mail vote of the Council, the removal of the offices from the present location to the 450 Sutter building had been authorized and that a five-year lease had been executed in the name and on behalf of the Association by the chairman of the Council and the secretary.

Discussion was then had as to the furnishing of the secretary's office, which would be used for Council meetings, and it was felt that proper furnishings should be obtained.

Action by the Council.—On motion of Kiger, seconded by Shephard, and unanimously carried, the following resolution was adopted:

Resolved: That the execution of said lease of offices by the chairman of the Council and the secretary be ratified and approved and that the Executive Committee be authorized to spend the necessary funds to properly furnish the new offices.

8. Program Committee.—The secretary stated that at the program meeting, held at Santa Barbara, it was the consensus of opinion that some ruling should be

made whereby when there was an abundance of material, not more than one paper could be submitted by any group of men jointly or financially jointly interested in the practice of medicine.

The secretary then read the following resolution:

Resolved, That it is the sense of the Program Committee that when there is an abundance of material submitted to section secretaries that not more than one paper be placed in the program from any group of two or more men who are jointly or financially jointly associated or interested in the practice of medicine.

Action by the Council.—On motion of Rogers, duly seconded, and unanimously carried, the following resolution was adopted:

Resolved, That the foregoing resolution be adopted.

9. Affiliate Membership.—Letter from the secretary of the Santa Clara County Society requesting that Dr. James C. Blair be granted affiliate membership was read. Doctor Shephard stated that Doctor Blair had been a member of the Santa Clara County Society for many years and was now totally disabled.

Action by the Council.—On motion of Coffey, seconded by Peers, and unanimously carried, the following resolution was adopted:

Resolved, That Dr. James C. Blair, San Jose, Santa Clara County, be granted affiliate membership on account of illness.

10. Advertising in the Journal.—Discussion was had of various advertisements in the journal. It was the sense of the Council that all drugs should be passed upon and approved by the Council on Pharmacy and Chemistry of the American Medical Association according to resolution previously adopted.

It was the sense of the Council that the advertisements of Hexol, Calso, and Alqua should be continued, as these could not be considered as drugs.

11. Porter Sanitarium Advertisement.—A report was made on the Porter Sanitarium, of Los Angeles, which had requested advertising space in the journal. It was stated that a member of the Association was medical director of the sanitarium at the present time and that the name of the institution was to be changed eventually.

It was the sense of the Council that until all contemplated changes were made, the advertisement be not accepted.

12. Minutes of the Council.—The chairman stated that the minutes of the 179th and 180th meetings of the Council had been mailed to all councilors, and that if there were no objections he would entertain a motion for their approval without reading.

Action by the Council.—On motion of Shephard, seconded by Duffield, and unanimously carried, the following resolution was adopted:

Resolved, That the minutes of the 179th and 180th meetings of the Council, as mailed to all members of the Council, be approved.

13. Minutes of the Executive Committee.—The chairman of the Council stated that the minutes of the 109th, 110th, 111th, 112th meetings of the Executive Committee had been mailed to all councilors and that if there were no objections he would entertain a motion that they be approved without further reading.

Action by the Council.—On motion of Shephard, seconded by Duffield, and unanimously carried, the following resolution was adopted:

Resolved, That the minutes of the 109th, 110th, 111th, and 112th meetings of the Executive Committee, as mailed to all councilors, be approved.

14. Income Tax Resolutions.—The secretary stated that replies had been received from several county societies endorsing resolutions on reduction of tax on earned incomes.

It was the sense of the Council that the resolutions be forwarded to Congress.

15. Councilor Visits.—Shephard, Fifth District—Dr. John Hunt Shephard, councilor for the Fifth District, reported that the county societies in his district, with the exception of San Benito, were getting along very nicely. In San Benito Doctor Shephard stated he had corresponded with the members in an endeavor to get them to hold a meeting. Doctor Rogers suggested that the members of San Benito County be invited to meetings by the surrounding counties and that in a few months a new spirit and interest would exist.

16. Employees' Medical Service.—Correspondence from George H. Kress regarding employees' medical service agreements, furnished by the Ross-Loos Clinic, was discussed. Full discussion was had of the problem of care of employees by large corporations. It was felt that all phases of this matter should be studied by a special committee.

Action by the Council.—On motion of Coffey, duly seconded and unanimously carried, the following resolution was adopted:

Resolved, That the question of employees' medical service be referred to a special committee.

Action by the Council.—On motion of Duffield, seconded by Peers, and unanimously carried, the following resolution was adopted:

Resolved, That a committee to investigate the question of medical service to employees be appointed of which Doctor Coffey shall be chairman; and that Doctor Coffey be authorized to appoint the other members of the committee.

17. Adjournment.—There being no further business the meeting adjourned to meet in the same place at 9 a. m. Tuesday, May 7, 1929.

OLIVER D. HAMLIN, *Chairman*.
EMMA W. POPE, *Secretary*.

* * *

Minutes of the One Hundred and Eighty-Third Meeting of the Council of the California Medical Association

Approved at the One Hundred and Eighty-Sixth Meeting of the Council of the California Medical Association, September 28, 1929

Held in the Old Brokers' Office, Hotel del Coronado, Coronado, California, Tuesday, May 7, 1929.

Present.—Doctors Kiger, Gibbons, Palette, Kinney, Duffield, Shephard, Coffey, Hamlin, Harris, Rogers, Peers, Kress, Shoemaker, Kelly, Curtiss, Pope, and General Counsel Peart.

Absent.—Doctors Catton, DeLappe, and Bingaman.

1. Roll Call.—The meeting was called to order by the chairman, Oliver D. Hamlin.

2. Committee on Industrial Medical Survey.—Dr. Gayle G. Moseley, chairman of the Committee on Industrial Medicine, addressed the Council. Doctor Moseley stated that Dr. Ray Lyman Wilbur had been added to the committee and that this had enabled him to cooperate with the Committee on the Cost of Medical Care of which Doctor Wilbur is chairman. Doctor Moseley stated that the survey entailed much investigation, and outlined future activities. The Council felt that some arrangement should be made to care for the necessary clerical and stenographic work.

Action by the Council.—On motion of Palette, seconded by Harris, and unanimously carried, the following resolution was adopted:

Resolved, That the matter of clerical assistance for Doctor Moseley be referred to the Executive Committee for definite action.

Doctor Moseley stated that he had used \$40 of the \$100 fund allowed him by the Association and that up to the present time much of the stenographic work had been done through the secretary's office.

Action by the Council.—On motion of Palette, sec-

onded by Harris, and unanimously carried, the following resolution was adopted:

Resolved, That the report of the committee be accepted and that the committee be thanked for the amount of work done.

3. Committee on Clinical Prizes.—George Dock of Pasadena submitted the report of the Committee on Clinical Prizes stating that no papers had been submitted this year. Doctor Dock suggested that publicity be given the prizes through the journal, the sections of the society and medical schools and component societies, and that the prizes be continued.

Action by the Council.—On motion of Rogers, duly seconded, and unanimously carried, the following resolution was adopted:

Resolved, That publicity be given these prize awards through the county societies, the journal, section officers and medical schools; and that the report of the committee be accepted and the committee continued.

The secretary pointed out that the term of Emmet Rixford, member of the committee, had expired.

Action by the Council.—On motion of Shephard, seconded by Harris, and unanimously carried, the following resolution was adopted:

Resolved, That Emmet Rixford be appointed a member of the Clinical and Research Prize Committee for a period of three years.

4. Radio Broadcasting.—Dr. Gertrude Moore, secretary of the Alameda County Society, reported on the broadcasting done over KLX by a member of the Alameda County Society. Doctor Moore stated that the talks were done by a member who had practically retired from active practice and that any claims that the broadcasting was used for personal gain in practice were unjust; that the doctor was primarily interested in educating the public to the benefits of ethical medicine, and that as soon as the remuneration from radio broadcasting and lecturing warranted he intended to give up all active practice. Doctor Moore stated that a stenographic record had been taken of several of the lectures and that it was true that at the beginning of each lecture the doctor announced that the lectures were in accordance with the ethics of the American Medical Association. Doctor Hamlin then gave a brief report on the broadcasting. It was stated that the broadcaster had expressed every wish to cooperate with the Alameda County Medical Society.

It was felt that the Alameda County Society should attempt to more closely supervise the lectures and that the doctor should be requested not to mention proprietary medicine in his lectures.

Discussion was then had as to the possibility of securing copies of the talks before they were broadcast for perusal by the Alameda County Society.

It was stated that a committee of the Alameda County Society was still investigating the situation in that county. The Council then referred the matter of broadcasting over KLX to the committee of the Alameda County Society. It was felt that the question of radio broadcasting should be referred to the proper committee under the new Constitution and By-Laws, *i. e.*, the Committee on Health and Public Instruction, and that they be asked to report on the Alameda County matter.

Action by the Council.—On motion of Shoemaker, seconded by Kelly, and unanimously carried, the following resolution was adopted:

Resolved, That the California Medical Association apply for a wave length.

The secretary was instructed to inform Doctor West that stenographic notes were being taken of the broadcasting and that a later report would be submitted.

5. Committees Under the New Constitution.—Dr. George H. Kress pointed out that under the new constitution the committees were to be appointed by the Council with the approval of the House of Delegates,

but that as time did not permit that procedure at this meeting, it would be necessary to have the House of Delegates pass a resolution delegating the Council to form these committees.

Action by the Council.—On motion of Harris, seconded by Kress, and unanimously carried, the following resolution was adopted:

Resolved, That the matter of appointment of committees under the new Constitution and By-Laws be considered as the first order of business at the next Council meeting.

6. Registration of Dietitians.—Dr. Junius B. Harris reported on legislation sponsored by the dietitians providing for registration of dietitians and stated that the medical profession had been asked to support the plan.

Action by the Council.—On motion of Pallette, seconded by Curtiss, and unanimously carried, the following resolution was adopted:

Resolved, That since the legislature is about to adjourn, no action be taken at this time.

7. Luncheon of County Secretaries and Councilors.

On account of various other activities, it was the sense of the Council that the luncheon of county secretaries and councilors be dispensed with at this annual meeting.

8. Councilor Visits.—Hamlin, Seventh District—Doctor Hamlin reported that all counties in his district were in a satisfactory condition. During the year a visit was made to San Joaquin County and conditions there seem to be more satisfactory than previously. The members of Contra Costa County often attend meetings of the Alameda County Society. There is nothing special to report in Contra Costa County. In Alameda County we have had quite an increase in membership. Alameda County requires six months residence in the county before membership is granted.

Rogers, Ninth District—Doctor Rogers reported that he had not visited Humboldt during the past year, but that they had three meetings in which five counties were represented; that the members in his district were very enthusiastic about intercounty meetings. At one of the combined meetings Woodland Clinic presented a fine program. Five of the counties are fairly close together, and they hold two or three meetings a year at which fifty or sixty men are present. The meetings are generally followed by a good program or dinner. Doctor Rogers stated that there was a rumor that Eureka was considering asking for the 1931 convention.

9. Nurses Training in Dietetics.—Letter from Fred R. DeLappe regarding the training of nurses at the Burnett Sanitarium in dietetics was presented.

It was the sense of the Council that the letter be forwarded to Doctor Dickie, director of the State Board of Health.

10. Central California Sick and Accident Association.—Letter from Fred R. DeLappe regarding the Central California Sick and Accident Association was read.

It was the sense of the Council that this matter be referred to the new Committee on Medical Education and Hospitals.

11. Crippled Children's Clinic.—Dr. John Hunt Shephard reported on the activities of the Crippled Children's Society in San Jose and stated that a clinic was to be held shortly under the auspices of the Teachers' Association, who had been cooperating with the Santa Clara County Medical Society.

12. District Councilor Societies.—Discussion was had of the proposed plan of district councilor societies. It was felt that with the number of special society meetings, staff meetings and county society meetings held at the present time, the advisability of holding additional meetings was questionable. It was the consensus of opinion that the matter of the forma-

tion of councilor district societies should be left to the discretion of the districts themselves and that it should in no way be made compulsory.

13. **Adjournment.**—There being no further business the meeting adjourned to meet in the same place at 9 a. m. Wednesday, May 8, 1929.

OLIVER D. HAMLIN, *Chairman*.
EMMA W. POPE, *Secretary*.

* * *

Minutes of the One Hundred and Eighty-Fourth Meeting of the Council of the California Medical Association

Approved at the One Hundred and Eighty-Sixth Meeting of the Council of the California Medical Association, September 28, 1929

Held in the Old Brokers' Office, Hotel del Coronado, Coronado, California, Wednesday, May 8, 1929.

Present.—Doctors Kiger, Gibbons, Pallette, Kinney, Duffield, Shephard, Hamlin, Harris, Rogers, Peers, Kress, Kelly, Curtiss and Pope, and General Council Peart.

Absent.—Doctors Bingaman, DeLappe, Coffey, Catton, Shoemaker.

1. **Call to Order.**—The meeting was called to order by the chairman, Oliver D. Hamlin.

2. **District Councilor Societies.**—It was felt that since Doctor Kress had been absent from the room, working on the Constitution, at the time the matter of district councilor societies was discussed, the opinion of the Council should be transmitted to him. Doctor Kress expressed a desire to keep the question alive.

Action by the Council.—On motion of Duffield, duly seconded and unanimously carried, the following resolution was adopted:

Resolved, That the matter of district councilor societies be referred to the proper committee under the new Constitution.

3. **Report of Dr. DeLappe on Councilor Visits.**—The secretary read a letter from Fred R. DeLappe of Modesto reporting on visits to county societies during the year.

4. **Senate Bill No. 207.**—The Council was informed that Doctor Catton had given notice of the passage of Senate Bill No. 207, Expert Medical Testimony.

5. **Radio Broadcasting.**—It was stated that the Unitarian minister at San Diego had asked that some member of the medical profession broadcast over his radio on Friday evening.

Action by the Council.—On motion of Harris, seconded by Peers, and unanimously carried, the following resolution was adopted:

Resolved, That the matter of radio broadcasting be turned over to the Arrangements Committee with the request that they furnish a speaker.

6. **Election of Councilors Under New Constitution.** Discussion was had of the election of councilors under the new Constitution. A chart was then submitted showing the terms of councilors under the new Constitution:*

It was stated that resignations had been received from councilors as noted on the chart.

Procedure to be followed in the election of officers was then outlined.

7. **Order of Business.**—Discussion was had of the order of business for the second meeting of the House of Delegates. The chairman of the Program Committee then presented a new order of business.

Action by the Council.—On motion of Duffield, seconded by Peers, and unanimously carried, the following resolution was adopted:

Resolved, That the order of business for the second meeting of the House of Delegates as submitted by the chairman of the Program Committee be approved.

8. **Adjournment.**—There being no further business the meeting adjourned to meet in the same place at 9:30 a. m. Thursday, May 9, 1929.

OLIVER D. HAMLIN, *Chairman*.
EMMA W. POPE, *Secretary*.

* * *

Minutes of the One Hundred and Eighty-Fifth Meeting of the Council of the California Medical Association

Approved at the One Hundred and Eighty-Sixth Meeting of the Council of the California Medical Association, September 28, 1929

Held in the Old Brokers' Office, Hotel del Coronado, Coronado, California, Thursday, May 9, 1929.

Present.—Doctors Kiger, Gibbons, Pallette, Kinney, Duffield, Hamlin, Harris, Rogers, Peers, Kress, Kelly, Pope, and General Counsel Peart.

Absent.—Doctors DeLappe, Coffey, Catton, and Bingaman.

1. **Call to Order.**—The meeting was called to order by the president, Morton R. Gibbons.

2. **Adjournment of the 1928 Council.**

Action by the Council.—On motion of Kelly, seconded by Rogers, and unanimously carried, the following resolution was adopted:

Resolved, That the 1928 Council adjourn; *sine die*, and that the 1929 Council convene and that the secretary call the roll.

Present.—Doctors Gibbons, Pallette, Kinney, Duffield, Hamlin, Arnold, Harris, Rogers, Peers, Kress,

**Chart Showing Terms of Councilors Under New Constitution*

Number of District	Expiration Present Term	Expiration Successor's Term	Incumbent	Remarks	Term of Successor
1	1930	1932	Kinney	Resignation	Three years
2	1931	1930	Duffield	Resignation effective 1930	No election
3	.....	1931	Bingaman } Shephard } Coffey Hamlin	Resignation effective 1930	Two years
4	1931	1932			Three years
5	1929	1930			One year
6	1929	1931			Two years
7	1929	1932	Harris	Resignation effective 1930	Three years
8	1931	1930			No election
9	1929	1931	Rogers		Two years
At Large					
Shoemaker	1929	1932	Shoemaker		Three years
Kress	1929	1931	Kress		Two years
Catton	1929	1932	Catton		Three years
Curtiss	1929	1930	Curtiss		One year
Peers	1931	1931	Peers	Resignation effective 1930	No election
Kelly	1931	1930	Kelly		No election

Kelly, Moseley, Cushman, Hunter, Pope, and General Counsel Peart.

Absent.—Doctors Coffey, DeLappe, Catton, and Phillips.

3. Election of Chairman.—Oliver D. Hamlin was nominated by T. Henshaw Kelly, seconded by William Duffield, as chairman of the Council for the ensuing year.

On motion of Kelly, duly seconded and carried, the secretary was instructed to and did cast the ballot of all the members of the Council for Doctor Hamlin, and the chair announced the election of Oliver D. Hamlin as chairman of the Council. Doctor Hamlin then took the chair.

4. Vice-Chairman of the Council.—T. Henshaw Kelly was nominated by Morton R. Gibbons, seconded by George Kress, as vice-chairman of the Council for the ensuing year.

On motion of Gibbons, duly seconded and unanimously carried, the secretary was instructed to and did cast the ballot of all the members of the Council for Doctor Kelly, and the chair announced the election of Doctor Kelly as vice-chairman of the Council.

5. Election of Secretary.—Emma W. Pope was nominated by William Duffield, seconded by Peers, as secretary of the Association for the ensuing year at her present salary.

On motion of Duffield, duly seconded and unanimously carried, the chair was instructed and did cast the ballot of all the members of the Council for Doctor Pope and announced the election of Emma W. Pope as secretary of the Association, at her present salary.

6. Election of Editor.—George H. Kress was nominated by William Duffield, seconded by Morton Gibbons, as editor of the journal for the ensuing year at his present salary.

On motion of Duffield, duly seconded and unanimously carried, the secretary was instructed and did cast the ballot of all the members of the Council for Doctor Kress, and the chair announced the election of Doctor Kress as editor at his present salary.

7. Election of Associate Editor.—Emma W. Pope was nominated by William Duffield, seconded by Morton Gibbons, as associate editor of the journal for the ensuing year at her present salary.

On motion of Duffield, duly seconded and unanimously carried, the chair was instructed and did cast the ballot of all the members of the Council for Doctor Pope and announced the election of Doctor Pope as associate editor at her present salary.

8. General Counsel and Associate General Counsel.

On motion of Kress, duly seconded and unanimously carried, the following resolution was adopted:

Resolved, That Hartley F. Peart be appointed general counsel of the Association for the ensuing year at his present retainer; and that Hubert Morrow be appointed associate general counsel for the ensuing year at his present retainer.

9. Arrangements Committee.—On motion of Peers, seconded by Gibbons, and unanimously carried, the following resolution was adopted:

Resolved, That the chairman of the Council have authority to appoint the members of the Arrangements Committee without further approval.

10. Auditing Committee.—After discussion, in accordance with constitutional provision, the chairman of the Council appointed as members of the Auditing Committee, Doctors T. Henshaw Kelly, chairman; Joseph Catton and Walter B. Coffey. The committee was approved by the Council.

11. Fall Meeting.—The question of setting the date of the fall Council meeting to be held at Los Angeles was discussed and it was decided that the date be set as September 28, 1929.

12. Committees Under New Constitution.—Discussion was had of the appointment of committees

under the Constitution. It was felt that a member of the Council should be placed on each committee to contact with the Council, but that this councilor should not accept the chairmanship of the committee and should serve for the one-year term.

The membership of the Program Committee was discussed and it was pointed out that at the present time there was a chairman and four members, whereas the new Constitution provided for but three members and a chairman and the secretaries of the sections on General Medicine and General Surgery. Doctor Pope then explained that Dr. J. Marion Read had originally been placed on the committee because he was holding the office of secretary of the Section of General Medicine. Doctor Pope stated that two northern members were on the committee and therefore she felt that Doctor Read's name should be eliminated in spite of the fact that he had been an active member. The membership of the committee was then fixed as follows, each member being duly nominated and elected:

Emma W. Pope, chairman, one-year term, expiring 1930, *ex officio*.

Robert V. Day, one-year term, expiring 1930.

Lemuel P. Adams, two-year term, expiring 1931.

Karl Schaupp, three-year term, expiring 1932.

Walter Bliss, secretary General Medicine, one-year term, *ex officio*.

Clarence Toland, secretary General Surgery, one-year term, *ex officio*.

Standing Committees

Standing Committees under the new Constitution were then discussed and the following members were duly nominated and elected to serve on the respective committees.

COMMITTEE ON ASSOCIATED AND TECHNICAL GROUPS

Harold A. Thompson, San Diego; three-year term, expiring 1932.

William Bowman, Los Angeles; two-year term, expiring 1931.

T. Henshaw Kelly, San Francisco; one-year term, expiring 1930.

COMMITTEE ON EXTENSION LECTURES

James F. Churchill, San Diego; three-year term, expiring 1932.

Robert T. Legge, Berkeley; two-year term, expiring 1931.

Robert A. Peers, Colfax; one-year term, expiring 1930.

Emma W. Pope, *ex officio*.

COMMITTEE ON HEALTH AND PUBLIC INSTRUCTION

Fred B. Clark, Long Beach; three-year term, expiring 1932.

Gertrude Moore, Oakland; two-year term, expiring 1931.

Henry S. Rogers, Petaluma; one-year term, expiring 1930.

COMMITTEE ON HOSPITALS, DISPENSARIES, AND CLINICS

John Ruddock, Los Angeles; three-year term, expiring 1932.

Walter B. Coffey, San Francisco; two-year term, expiring 1931.

Gayle G. Moseley, Redlands; one-year term, expiring 1930.

COMMITTEE ON INDUSTRIAL MEDICAL PRACTICE

Packard Thurber, Los Angeles; three-year term, expiring 1932.

Ross W. Harbaugh, San Francisco; two-year term, expiring 1931.

Gayle G. Moseley, Redlands; one-year term, expiring 1930.

N. B.—Names of officers who automatically become *ex officio* members of certain committees without specific election to such committees are appended to the committees.

COMMITTEE ON MEDICAL ECONOMICS

John H. Graves, San Francisco; three-year term, expiring 1932.

William T. McArthur, Los Angeles; two-year term, expiring 1931.

Ruggles A. Cushman, Santa Ana; one-year term, expiring 1930.

COMMITTEE ON MEDICAL EDUCATION AND MEDICAL INSTITUTIONS

George Dock, Pasadena; three-year term, expiring 1932.

H. A. L. Ryfkogel, San Francisco; two-year term, expiring 1931.

George G. Hunter, Los Angeles; one-year term, expiring 1930.

COMMITTEE ON MEDICAL DEFENSE

George G. Reinle, Oakland; three-year term, expiring 1932.

Dwight H. Trowbridge, Fresno; two-year term, expiring 1931.

Mott H. Arnold, San Diego; one-year term, expiring 1930.

COMMITTEE ON MEMBERSHIP AND ORGANIZATION

Harlan Shoemaker, Los Angeles; three-year term, expiring 1932.

LeRoy Brooks, San Francisco; two-year term, expiring 1931.

Jesse W. Barnes, Stockton; one-year term, expiring 1930.

Emma W. Pope, *ex officio*.

COMMITTEE ON HISTORY AND OBITUARIES

Charles D. Ball, Santa Ana; three-year term, expiring 1932.

Percy T. Phillips, Santa Cruz; two-year term, expiring 1931.

Emmet Rixford, San Francisco; one-year term, expiring 1930.

Emma W. Pope, *ex officio*.

George H. Kress, *ex officio*.

COMMITTEE ON PUBLICATIONS

Alfred C. Reed, San Francisco; three-year term, expiring 1932.

Percy T. Magan, Los Angeles; two-year term, expiring 1931.

Frederick Gundrum, Sacramento; one-year term, expiring 1930.

Emma W. Pope, *ex officio*.

George H. Kress, *ex officio*.

COMMITTEE ON PUBLIC POLICY AND LEGISLATION

Junius B. Harris, chairman, Sacramento; three-year term, expiring 1932.

William Duffield, Los Angeles; two-year term, expiring 1931.

Joseph Catton, San Francisco; one-year term, expiring 1930.

Morton R. Gibbons, *ex officio*.

Lyell C. Kinney, *ex officio*.

13. Funds of the Association.—Doctor Kelly expressed the opinion that the Association should be able to procure $4\frac{1}{4}$ per cent on its savings accounts since the money was deposited for such length of time.

On motion of Kelly, seconded by Gibbons, and unanimously carried, the following resolution was adopted:

Resolved, That the Auditing Committee investigate the possibilities of securing $4\frac{1}{4}$ per cent on the funds invested in savings accounts.

14. Referendum.—The general counsel presented the following resolution passed by the House of Dele-

gates directing a referendum in the matter of incorporation:

"Whereas, The House of Delegates of the California Medical Association at the regular annual session thereof duly noted, called, and held at Coronado, San Diego County, California, May 6 to May 9, 1929, did at a regular meeting of said session held on the eighth day of May 1929 (a quorum being present and acting), duly pass and adopt by the affirmative vote of two-thirds of the members thereof present and acting, a resolution in words and figures as follows, viz.:

"Whereas, The objects and purposes of this Association will be aided and furthered by the formation of a corporation, and the conveyance, assignment and transfer to such corporation of certain assets and property of this Association, now, therefore, be it

"Resolved, That the Council is hereby authorized, empowered and directed to cause the formation and organization of a nonprofit corporation under the laws of the State of California, without capital stock, the members whereof shall be active members of this Association, who are councilors or constitutional officers thereof, with such incorporators, name, purposes, objects, principal place of business, term, number of directors, and directors to serve for the first year and until their successors are elected, and shall have accepted office, and with such provisions regarding the voting power and property rights and interests of the members of the corporation and with such further provisions in the articles of incorporation thereof and with such by-laws as the Council shall prescribe, fix, and determine; and be it further

"Resolved, That upon the formation of such corporation the Council and the officers of this Association or any of the officers designated by the Council are hereby authorized and empowered to grant, assign, transfer, convey, and deliver, or to cause to be granted, assigned, transferred, conveyed, and delivered to the said corporation without any consideration therefor, such property, real or personal, of the Association as the Council shall determine; and to execute and deliver in the name of the Association such conveyances, assignments, and transfers and other instruments as shall be approved by the Council to carry out the foregoing; now, therefore, be it

"Resolved, That the said resolution and the action of the House of Delegates in passing and adopting the same be submitted to the decision and referendum votes of all of the active members of the Association by mail; and be it further

"Resolved, That the Council be and it is hereby authorized, empowered, and directed to fix and determine the form in which said resolution and the action of the House of Delegates in passing and adopting the same shall be so referred and submitted by mail to the active members of this Association, the form of the ballot thereon and the time within which such referendum vote shall be cast by said active members."

Mr. Peart then submitted a resolution on procedure for the referendum.

After discussion, on motion of T. Henshaw Kelly, duly seconded, and unanimously carried, the following resolution was adopted:

"Whereas, The House of Delegates of the California Medical Association by resolution duly adopted May 8, 1929, authorized, empowered, and directed the Council to cause the formation and organization of a corporation, as in said resolution set forth, and upon the formation thereof to grant, assign, transfer, and convey to such corporation, without consideration, such property, real or personal, of the Association as the Council shall determine; and

"Whereas, Said House of Delegates thereafter, by resolution duly adopted May 8, 1929, directed that said resolution and the action of the House of Delegates in passing and adopting the same be submitted to the referendum vote of all of the active members

of the Association by mail and authorized, empowered and directed the Council to fix and determine the form in which said resolution and said action of the House of Delegates should be so referred by mail to the active members of this Association, and the time within which such referendum vote should be cast; now, therefore, be it

"Resolved, That the secretary shall, on or before the fifteenth day of July, 1929, mail to each active member of the Association at his address as shown by the records of the secretary's office, a true copy of said resolution directing said referendum containing a true copy of said resolution providing for said incorporation, together with an explanatory statement to be prepared and signed by the president, the chairman of the Council, and the secretary, of the objects and purposes to be accomplished by the formation of such corporation and the conveyance, assignment and transfer to it of certain assets and property of the Association, and notifying the member that his vote must be cast by the ballot enclosed therewith and that such ballot must be placed in a sealed envelope bearing his name on the corner thereof and mailed or delivered to the secretary's office on or before the first day of December 1929, which is hereby fixed as the time within which such referendum vote shall be cast.

Said ballot shall be in the following form:

"I favor and consent to:

"I disapprove and do not consent to:

"... the formation by the Council of a nonprofit corporation under the laws of California, without capital stock, to aid and further the objects and purposes of the Association and also the conveyance, assignment and transfer to such corporation of such property of the Association without consideration therefor as the Council shall determine, as provided by resolution adopted by the House of Delegates May 8, 1929, and the action of said resolution of the House of Delegates.

"Signature.

"Address.

"And be it further Resolved, That said explanatory statement be approved by a majority of the officers of the Association signing the same, and that the Executive Committee be authorized, empowered, and directed to canvass the said vote as soon as possible after the final date fixed therefor, and that the Executive Committee be further authorized and empowered to do any further acts and take any further proceedings necessary to conduct and hold said referendum vote."

15. District Councilor Societies.—Doctor Kress brought up the question of the formation of councilor district societies and stated that he thought a provision could be made to set aside fifty cents of dues of members for the carrying out of the plan of district councilor societies wherever such societies were formed.

Action by the Council.—On motion of Kress, duly seconded and unanimously carried, the following resolution was adopted:

Resolved, That any district councilor who desires to bring into existence a district councilor society, the Executive Committee approving, shall entitle the said district society to fifty cents from the regular dues of the Association for every member, after the formation of the society in accordance with Section 18 of Chapter 8 of the by-laws.

16. Paper for the Journal.—Discussion was had of the publication of a paper on "The Legal Aspects of Eugenic and Therapeutic Sterilization." Mr. Peart suggested that certain deletions be made before publication.

Action by the Council.—On motion of Gibbons,

seconded by Kelly, and unanimously carried, the following resolution was adopted:

Resolved, That the paper be published under the usual rules of publication.

17. Offices of the Association.—Doctor Kelly stated that, in accordance with the mail vote of the Council authorizing the moving of the offices to the new 450 Sutter Building, a plan had been submitted covering space and a lease had been signed in the name of the Association by the chairman of the Council for a period of five years.

Action by the Council.—On motion of Kelly, seconded by Gibbons, and unanimously carried, the following resolution was adopted:

Resolved, That the offices of the Association shall be formally moved from their present location in the Balboa Building to the new 450 Sutter Building on or after September 1, 1929, and that the Council authorizes the Executive Committee to take the necessary steps to carry out the moving.

18. Resolution on Clinics.—The resolution on clinics and like dispensaries referred to the Council by the House of Delegates was discussed.

Action by the Council.—On motion of Kress, seconded by Duffield, and unanimously carried, the following resolution was adopted:

Resolved, That the resolution be brought to the attention of the Committee on Hospitals, Dispensaries, and Clinics, and that the committee be instructed to formulate plans of procedure and present same to the Executive Committee.

19. Thomas J. Lenehan.—The Council expressed the opinion that Thomas J. Lenehan should be thanked for the assistance he had given the medical profession in legislative problems.

Action by the Council.—On motion of Kress, seconded by Duffield, and unanimously carried, the following resolution was adopted:

Resolved, That the Council of the California Medical Association express its thanks for the generous service and coöperation with our Legislative Committee shown by Mr. Thomas J. Lenehan.

20. Committees Under Old Constitution.—It was stated that the adoption of the new constitution and by-laws automatically dissolved committees appointed under the old Constitution.

Action by the Council.—On motion of Kelly, seconded by Kress, and unanimously carried, the following resolution was adopted:

Resolved, That the work of all special committees now in existence be scrutinized carefully and referred to the proper standing committee for action, and that these special committees be thanked for the services performed and are hereby declared dissolved.

21. Industrial Medicine Committee.—Discussion was then had of the special Committee on Industrial Medicine and it was decided that this work be referred to the standing committee and that Doctor Moseley's name be substituted on this committee in place of Doctor Arnold and that his name be removed from the Committee on Medical Defense and Doctor Arnold's substituted therefor.

22. Expenses of Annual Meeting at Coronado.—The attention of the Council was called to the ruling that any deficit between the income from the annual meeting and the expenses would be met by the Association. It was stated that at the present time it was felt that not more than \$500 would be requested and that there was a possibility that no deficit whatever would exist after all accounts had been straightened.

23. Adjournment.—There being no further business the meeting adjourned.

OLIVER D. HAMLIN, *Chairman.*

EMMA W. POPE, *Secretary.*

COMPONENT COUNTY SOCIETIES

FRESNO COUNTY

The regular meeting of the Fresno County Medical Society was held after dinner at the Hotel Californian on the evening of October 1. Fifty members were present.

Dr. Gunther Nagel presented a paper in which points brought out below were mentioned.

Excision of Duodenal and Gastric Ulcer

Duodenal and gastric ulcers are usually classified under the single heading of peptic ulcer. In certain respects this may be correct, but from a surgical viewpoint gastric and duodenal ulcers must be considered as separate and distinct lesions.

Duodenal ulcer occurs ten times as frequently as gastric ulcer. Duodenal ulcers often heal spontaneously and under medical management. Many duodenal ulcers, however, resist all forms of medical treatment. In a large postmortem service I studied the duodenums of patients dying from all types of disease and lesions. In from 10 to 15 per cent of these cases I was able to find scars in the duodenum as evidence of healed duodenal ulcers. Duodenal ulcer never becomes malignant. Because of these facts the management of duodenal ulcer is a combined medical and surgical problem.

Excision of duodenal ulcer has not gained in popularity for two reasons. The first is that gastro-enterostomy has proved to be a very satisfactory operation. Were it not for the occasional occurrence of gastro-jejunal ulceration, gastro-enterostomy would leave little to be desired. The second reason for the lack of popularity of excision of duodenal ulcer is that the operation is often done in cases where it is not indicated, and the poor results which naturally follow have tended further to discredit the procedure.

Pyloric spasm is an almost constant accompaniment of duodenal ulcer, and seems to account for many of the symptoms from which these patients suffer. In a selected group of cases the ulcer, together with the cap of the duodenum and a good portion of the pyloric sphincter muscle, must be removed, closing the opening thus made as a gastroduodenostomy. In this procedure the normal continuity of the gastrointestinal tract is maintained. The results following this procedure are excellent.

Gastric ulcer differs from the duodenal ulcer in several important respects. Gastric ulcers do not heal as readily under medical management as duodenal ulcers. Gastric ulcers may become malignant; duodenal ulcers never become malignant. The occasional occurrence of malignancy in a gastric ulcer, whether on the base of a previously benign ulcer, or on what was a malignant ulcer from the start, makes gastric ulcer a serious and always a surgical problem.

Gastric ulcers should be either excised or resected. If the lesion is small, excision can be very satisfactorily done. Excision of gastric ulcer should always be combined with gastro-enterostomy.

J. M. FRAWLEY, *Secretary*.



KERN COUNTY

The regular meeting of the Kern County Medical Society was held Thursday, September 19, at 8:15 p. m., with Doctor Kirby, as president, in the chair.

The secretary's report of our last meeting, which was held in May, was read and approved. A number of communications from the State Medical Society were read. Dr. Seymour Strongin's application for membership in the society was referred to the State Association for approval.

Dr. L. A. Packard gave us an interesting discussion on "Sinusitis in Children." This paper was supplemented by a rather comprehensive x-ray demonstra-

tion of various interesting sinus conditions in children. Sinusitis may develop as early as the ninth day after birth. Some of the most frequent causes are whooping-cough, diphtheria, diseased adenoids and tonsils, and foreign bodies in the nares. Treatment is usually local in character and rarely surgical.

Dr. Keith S. McKee, following Doctor Packard, gave us a discussion on "Sinusitis in Adults." In his paper he discussed the evolution of sinusitis, the function, etiology, exciting causes, and the diagnosis and treatment of the most common abnormal sinus conditions found in the adult.

These papers were enthusiastically received by the members, and the general opinion seemed to be that there was present in the society as good talent for our entertainment and edification as could usually be secured from the larger medical centers. It was suggested that many of our future programs be made up from among those of our own membership.

* * *

The Kern County Medical Society held its regular monthly meeting, Thursday, October 17, at the Kern General Hospital.

Dr. E. Rosencrantz, chief of the University of California Tuberculosis Service, gave an illustrated lecture on the Rollier method of treating all forms of tuberculosis by heliotherapy (sun treatment). It was shown that Doctor Rollier, by his methods, has cured many apparently hopeless cases of bone and joint tuberculosis. These patients are exposed systematically daily to the bright sunlight of the high Alps, in Switzerland, over periods of time varying from six months to two years, with most remarkable results. Tuberculosis of the hands or feet upon which surgeons had decided to amputate were completely cured by this slow, but very effective treatment. These patients lived almost continuously in the open with no clothing other than a loin cloth. Dressed in this way they would run and play in the snow before leaving the institution, becoming active enough to do skiing and other forms of vigorous exercise in the open.

After the lecture the subject was discussed by various members of the medical society and many questions were asked, which Doctor Rosencrantz answered. There were a larger number of members present than usual, and all seemed to be very much interested in the lecture given by Doctor Rosencrantz.

After the program the members adjourned to the dining room for refreshments, where the discussion of heliotherapy was continued.

Dr. Joseph Smith, superintendent of the Kern General Hospital, showed Doctor Rosencrantz some of the interesting features of the hospital, including the new physiotherapy department and surgery. Doctor Rosencrantz pronounced it a most marvelous and wonderful hospital, and was also surprised at the excellence of its equipment.

E. A. SCHAPER, *Secretary*.



SACRAMENTO COUNTY

The Sacramento Society for Medical Improvement met at the Senator Hotel on September 17, and was called to order by President Pope at 9:45 p. m.

The minutes of the previous meeting were read and approved.

Dr. F. Scatena reported a case of hemachromatosis. These conditions are rare and difficult to diagnose. The case was that of a young male who was admitted to the hospital in 1927 with a large spleen and showed pigmentation. He left the hospital after a short time. About five weeks ago he reentered the hospital complaining of epigastric pain. The pigmentation was deeper and the liver and spleen larger. Three per cent sugar was present in the urine. A section of the skin showed iron. Blood pressure was 106 systolic. The

patient is now under treatment and gradually gaining in strength.

The first paper of the evening, "Travelogue," was given by Dr. O. Johnson.

Doctor Johnson described his trip to London. One first visits the Royal College of Physicians, where a fee is paid, and one then has access to any hospital he desires. He then pays a fee in the hospital for courses he wishes to take. In these hospitals he met many doctors from various places.

Doctor Johnson discussed diseases seen and their treatment.

Ulcerative colitis: Many cases were seen in Guy's Hospital. If no cause can be found a polyvalent serum of bacillary dysentery is given.

Hodgkins: This disease was first described in Guy's Hospital. X-ray therapy is given and emetin intravenously.

Megacolon: The etiologic factor here is thought to be the same as in cardiospasm. In the treatment a large rubber tubing is inserted into the lower bowel and allowed to remain, and after being in place for weeks the sphincter slowly stretches.

Purpura hemorrhagica: This is cured by the removal of the spleen.

Arthritis: In the Waterloo Hospital this is treated by calcium gluconate intravenously and parathyroid (Lily) intramuscularly.

Dr. C. B. McKee described his visit to England, Scotland, Norway, Sweden, Denmark, and Germany. In England, in sinus operations, the patients go home immediately following the operation. He gave a description of the trip from Mainz to Coblenz and described the Rhine River. The paper ended with lantern slides of Versailles.

Doctor Rulison's paper was on the opinions and practice of men in London and Glasgow. His first remarks were on Dr. J. Collyer and his work on epilepsy. Doctor Collyer believes an alkalosis to be present, and the convulsion is an attempt to right this condition. The treatment is an increase in acidosis.

Sir V. Gonney was especially interested in fibromyomata of the uterus. He believes in preserving the uterus when possible. Doctor Bonney has developed a clamp for the broad ligament, and this controls bleeding during the operation. In acute salpingitis he advises immediate operation in all cases, and drains suprapubically. In cancer of the uterus radium is worthy. He reported a 22.7 per cent cure in four hundred and sixty cases. He believes, however, that all operative cases should be operated. His operative cure is 25 per cent.

Doctor Patterson still uses the old technique. He uses the anterior gastro-enterostomy instead of the posterior. In cancer of the tongue he does a primary resection and about two months later resects the cervical glands.

In Glasgow the doctors were more like those found in America. Doctor Cameron uses no cap or mask, and uses the same gown and gloves for successive cases. In uterine prolapse he removes a triangular portion of the anterior vaginal wall and does a high trachelorrhaphy. The mucous membrane is then sutured to the internal os.

Doctor Rulison stated that in Scotland they did not tolerate medical cults, but the medical laws governing the doctors are very strict. He also made a few remarks about medicine in Norway and Berlin.

Dr. C. B. Jones gave a paper on his trip to Japan. Doctor Jones stated that most of us have the wrong impression of Japan. There is no sanitation in Japan, but with this the water supply is safe in the larger cities. This is due to boiling and chlorination. In the country the water is dangerous, and at this time of the year the supply is low. The heat there now is severe.

He spoke of the Tokyo catastrophe and the building of the city since then.

One of the most prevalent diseases is tuberculosis. This is one reason why no old people are seen. Very few people live to be over fifty years of age.

Tokyo has six hospitals. One of these is the Saint Luke's Hospital, which is built on the American plan. Here the rooms are of three classes.

Doctor Jones' talk was well illustrated with lantern slides.

The applications for membership from Doctors I. Mugford and D. W. Schallig were read for the first time.

Doctor Thom of the Hospital Committee gave a report. All patients now entering the Sacramento Hospital must interview the Social Service Department. This committee functions principally to handle complaints from the doctors.

There being no further business the meeting adjourned.

H. SCHLUTER, *Secretary*.

✽

SAN BERNARDINO COUNTY

The regular meeting of the San Bernardino County Medical Society was held at the San Bernardino County Hospital on October 1. Dinner was served at 7:10 p. m., about fifty members and guests being present.

The meeting was called to order at 8:30 p. m. The minutes of the previous meeting were read and approved.

A communication was read regarding the fall meeting of the Southern California Medical Association and the postgraduate course to be given by Professor Frankl in Los Angeles.

Election of officers was then held; the following being elected: President, E. L. Tisinger; first vice-president, A. T. Gage; second vice-president, C. L. Emmons; secretary-treasurer, E. J. Eytinge. Delegates to the California Medical Association were: F. F. Abbott and W. F. Pritchard; alternates, S. B. Richards and A. T. Gage.

The new president was inducted into office.

The retiring president's address followed, the subject being "The General Practitioner Versus the Specialist."

The guest of the evening, Dr. Charles L. Bennett of Los Angeles, was introduced by the retiring president. After commenting on Doctor Abbott's paper, Doctor Bennett spoke on "The Layman Looks at the Doctor." Discussion was opened by Dr. Gayle Moseley. Doctor Moseley's remarks were expanded by Doctor Bennett, who then closed the discussion.

The meeting adjourned at 10:10 o'clock.

E. J. EYTINGE, *Secretary*.

✽

SAN JOAQUIN COUNTY

The regular meeting of the San Joaquin County Medical Society was held Thursday evening at 8:30 o'clock, September 5, in the Medico-Dental Club, 242 North Sutter Street, Stockton.

The meeting was called to order by Dr. C. V. Thompson, president.

In the absence of the secretary, Dr. John J. Sippy was requested by the president to act as secretary pro tem.

Those in attendance were: Doctors J. W. Barnes, E. L. Blackmun, C. A. Broadus, J. F. Doughty, Linwood Dozier, F. T. Foard, P. B. Gallegos, Samuel Hanson, C. D. Holliger, H. E. Kaplan, R. V. Looser, H. C. Peterson, Dewey R. Powell, S. F. Priestly, G. H. Sanderson, J. J. Sippy, and C. V. Thompson. Dr. Karl Weiss of Stockton and Mr. Gilbert Curtis, bacteriologist at the Dameron Hospital, were also present.

The minutes of the June meeting were read and approved.

The Admission Committee reported favorably on the application of Dr. Ione Pinney, and she was accordingly declared a member of the society.

Dr. Dewey R. Powell introduced a resolution that the constitution of the county society be amended to conform with the constitution of the California Medical Association and the American Medical Association as regards the definition of ethics. His resolution was seconded by Doctor Doughty and was unanimously adopted without discussion.

The stated program of the evening followed: First, a paper on the "Azclheim-Sondek Test for Pregnancy" by Dr. H. E. Kaplan. Specimens were presented by Doctor Kaplan and Mr. Curtis in illustration of the points of the paper. A considerable amount of discussion and inquiries followed, Doctors Doughty, Dozier, Gallegos, and Hanson participating.

Dr. George Sanderson presented the second paper of the evening on "Goiter Operation in Mental Disorders." He illustrated with lantern slides. The paper was discussed by Doctors Blackmun, Foard, Looser, Kaplan, and Barnes.

The president and Doctor Dozier complimented the papers of the evening highly, and both urged that more effort be given by other members of the society to production of papers and talks of similar merit.

The meeting adjourned at 9:45 o'clock.

JOHN J. SIPPY, *Secretary Pro Tem.*

* * *

The stated meeting of the San Joaquin County Medical Society was held Thursday evening at 8:30 o'clock, October 3, in the Medico-Dental Club, 242 North Sutter Street, Stockton.

The meeting was called to order at 8:30 o'clock by Dr. C. V. Thompson, president, presiding.

Thirty members were in attendance and four visitors, Doctors Weiss and Sutton of Stockton and Doctors Bell and Tillotson of Woodland.

The members in attendance were: Doctors E. A. Arthur, J. W. Barnes, E. L. Blackmun, H. J. Bolinger, C. A. Broaddus, R. A. Buchanan, H. S. Chapman, F. J. Conzelmann, J. D. Dameron, J. F. Doughty, Linwood Dozier, C. F. English, F. T. Foard, Samuel Hanson, C. D. Holliger, J. P. Hull, B. M. Krout, R. V. Looser, Grace McCoskey, R. T. McGurk, F. S. Marnell, F. J. O'Donnell, H. C. Peterson, B. J. Powell, G. H. Rohrbacher, F. B. Sheldon, J. J. Sippy, Hudson Smyth, C. V. Thompson, and A. L. Van Meter. Dr. William B. Faulkner of San Francisco was guest and speaker of the evening.

The minutes of the previous meeting were read and approved.

The chairman presented Doctor Faulkner, who spoke on "Lung Abscess and Its Treatment." The speaker illustrated his lecture by lantern slides.

Doctors Tillotson and Bell discussed the paper and many questions were asked which the doctor answered in a very practical way.

FRED J. CONZELMANN, *Secretary.*

✽

SANTA BARBARA COUNTY

The regular meeting of the Santa Barbara County Medical Society was held in the auditorium of the nurses' home of the Cottage Hospital on Monday evening, October 14, at 8:30 o'clock.

Doctor Brush, the president, being detained, the meeting was called to order by Vice-president Dr. Hugh Freidell.

The minutes of the previous meeting were read and approved.

A communication from the Southern California Medical Association was read and ordered filed.

The first paper of the evening was "Amytol Anesthesia" by Dr. Rexwald Brown, in which he abstracted several thousand cases of amytol anesthesia with marvelous success.

This was followed by a paper entitled "Answers to Questions on Amytol Anesthesia" by Doctor Grand-

stadt, which concerned itself with the preparation, administration and differential usage and comparison between amytol and other anesthetics.

Both papers were most interesting and instructive, and were discussed by Doctors Ullmann, Thorner, Gray, Lewis, Freidell, Pierce, and Schurmeier.

The paper by Dr. Samuel Robinson on "Surgery of the Large Intestine" was extremely interesting, but on account of the lateness of the hour certain sections were omitted, and it was the consensus of opinion of the members present that the balance of the paper should be given at the next meeting, as the entire body was vitally interested in the subject.

Doctor Robinson's paper was discussed by Doctors Ullmann, Brown, Stevens, Freidell, and Geyman.

There being no further business the meeting adjourned.

WILLIAM H. EATON, *Secretary.*

CHANGES IN MEMBERSHIP

New Members

Orange County—Earl B. Ray.

San Bernardino County—Charles A. McDowell, Walter Ellis McKinzie.

San Diego County—Paul E. Wedgewood.

San Francisco County—Jacob Casson Geiger, Jay G. McCrary, Kiyoshi Matsumura, J. Edward Neville, Hajo Peter Plagge.

Siskiyou County—Joseph I. Porter.

Ventura County—Orel A. Welsh, Leighton R. Cornman.

Resignations

H. McVickar Smith, Orange County.

Transferred Members

Lewis Gunther, from San Francisco to Los Angeles County.

Raymond T. Wayland, from Santa Clara to Los Angeles County.

Valentine C. Holmer, from Tuolumne to San Francisco County.

John E. McGuinness, from Tuolumne to San Francisco County.

Deaths

Foster, Ralph de Lecaie. Died at San Diego, October 5, 1929, age 55 years. Graduate of the Hahnemann Medical College of the Pacific, San Francisco, 1899. Licensed in California, 1899. Doctor Foster was a member of the San Diego County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Jones, William Farrington. Died at San Rafael, August 15, 1929, age 69 years. Graduate of Cooper Medical College, San Francisco, 1885. Licensed in California, 1885. Doctor Jones was a member of the Marin County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Martin, Jean Marion. Died at Paris, September 19, 1929. Graduate of University of Southern California School of Medicine, Los Angeles, 1905. Licensed in California, 1905. Doctor Martin was a member of the San Francisco County Medical Society, the California Medical Association, and the American Medical Association.

Oliver, John Edward. Died at Stockton, October 5, 1929, age 66 years. Graduate of Jefferson Medical College of Philadelphia, 1885. Licensed in California, 1896. Doctor Oliver was a member of the San Joaquin County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Parker, Joseph Alexander. Died at San Francisco, October 1, 1929, age 36 years. Graduate of McGill

University Faculty of Medicine, Montreal, 1922. Licensed in California, 1922. Doctor Parker was a member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

Yates, William Charles. Died at Pacific Grove, September 15, 1929, age 64 years. Graduate of the Eclectic Medical College, Cincinnati, Ohio, 1887. Licensed in California, 1887. Doctor Yates was a member of the Monterey County Medical Society, the California Medical Association, and the American Medical Association.

NEVADA STATE MEDICAL ASSOCIATION

R. R. CRAIG.....President
W. A. SHAW.....President-Elect
H. A. PARADIS.....First Vice-President
R. P. ROANTREE.....Second Vice-President
HORACE J. BROWN.....Secretary-Treasurer
R. P. ROANTREE, D. A. TURNER,
S. K. MORRISON.....Trustees

COMPONENT COUNTY SOCIETIES

WASHOE COUNTY

The October 8 meeting of this society took place in the City Hall, the president, J. L. Robinson, in the chair.

The scientific program was in the nature of a symposium on venereal and genito-urinary subjects.

The first paper was delivered by Dr. Byron Caples on the subject "Syphilis—What It is, and What Can Be Done to Eradicate the Disease." In dealing with this world-wide problem the essayist gave a brief résumé of the American origin of syphilis, as taken from the monograph of Prof. Herbert U. Williams of the University of Buffalo, New York. In this historic account the author cited many contemporaneous authors, both lay and medical, of that day, who wrote extensively on the subject. The term "syphilis" did not come into application till at a much later date, and the disease was spoken of as the *bubas* by the earlier Spanish writers.

It has been found, according to the essayist, that the spirochetes can find entrance to the system without any apparently discernible invading point. In the course of a few days, spirochetes are then found in the deeper bone and gland structures.

Further, no treatment for syphilis should be begun until the physician was convinced by repeated examinations that the disease was really acquired by the patient. After diagnosis a vigorous system of treatment should start, and after periods of remission as necessary, coupled with serological and other examinations, the patient should consider that he must be under such treatment for at least a period of three years. A point dwelt upon most strongly was that no patient should be given any idea from his physician that there could be any definite cure assured with a certain number of injections or within any set period of time.

The next paper was an address by Dr. DeLos A. Turner, chief of the Veterans' Bureau of Reno, on "What the United States Army has Done to Educate the Public on the Matter of Venereal Infections." Colonel Turner is an overseas veteran of the World War and had sufficient opportunity to observe the result of General Orders No. 45, which dwelt with instructions to the soldier as to the inception and prophylaxis of venereal diseases. Doctor Turner likewise cited the General Orders No. 13 of the Civil War

and General Orders No. 27 of the Spanish-American War in reference to the same. However, in the Civil and Spanish-American Wars, procedures were not outlined in such detail or with such penalties as was the case of the World War. In this last war the military authorities recognized that venereal infection was a disease that could greatly limit a soldier's military efficiency, besides being a source of infection to others.

Both papers of Doctors Caples and Turner were generally discussed. Then followed a short talk by Doctor Perry on "The Hypertrophied Prostate and Its Problems."

In his talk, Doctor Perry considered that the first thing to consider relative to the patient with enlarged prostate was the degree of enlargement with symptomatic results shown by urinary hesitation, frequency, irritation and retention. If the patient showed signs of general physical ill-being, such as heart disease, hypertension, abnormal urea output, it would be possible that operation under such reduced vitality would not be altogether favorable. If possible, selected cases of careful medical regimen for the patient would in most cases pull the patient through operation. Operation would of choice be the suprapubic type. When undertaking the management of a patient with distended bladder, slow decompression is urged.

There were twenty members present. There being no further business the society adjourned.

THOMAS W. BATH, *Secretary.*

NEVADA NEWS

Dr. Thomas W. Bath of Reno has just been appointed to the rank of Surgeon-General of Nevada on the staff of Governor Fred Balzar. Doctor Bath was formerly Paymaster-General on Governor Balzar's staff.

Doctor Bath is a veteran of three wars, having served as a commissioned medical officer in the Spanish-American War in Cuba, also twice in the Philippines, and was battalion surgeon in the 162d Infantry (the third Oregon National Guard), overseas, in France and England in the World War.

He holds the rank of Lieutenant-Colonel in the auxiliary reserves, medical department. While in the Philippine Islands he was in several engagements and was made a prisoner at the battle of Kosocus, Luzon, where the enemy was reported to have lost, in killed and wounded, upward of seven hundred men.

Doctor Bath is the corresponding secretary of the Washoe County Medical Society, and is the associate editor for Nevada on CALIFORNIA AND WESTERN MEDICINE.

UTAH STATE MEDICAL ASSOCIATION

H. P. KIRTLEY, Salt Lake City.....President
WILLIAM L. RICH, Salt Lake City.....President-Elect
M. M. CRITCHLOW, Salt Lake City.....Secretary
J. U. GIESY, 701 Medical Arts Building,
Salt Lake City.....Associate Editor for Utah

OFFICIAL NOTICE

The postgraduate meeting of the Utah State Medical Association was held September 23 to 26, as previously announced.

Meetings were held at the Salt Lake General Hospital, where a good attendance of state members enjoyed the clinics and lectures presented by Doctors Don Abbott of Rush Medical College, Chicago, and Howard Hartman of Rochester, Minnesota.

In addition, we were fortunate in having Dr. Howard Kelly, dean of American physicians, with us on the 23d. Doctor Kelly pinch hit for Doctor Abbott, who was delayed in his arrival, and his lecture was heartily enjoyed.

COMPONENT COUNTY SOCIETIES

SALT LAKE COUNTY

The regular meeting of the Salt Lake County Medical Society was held at the L. D. S. Hospital, Monday, September 9.

The meeting was called to order at 8 p. m. by President C. M. Benedict. Fifty members and ten visitors were present.

The minutes of the meeting of June 10 were read and accepted without correction.

The following clinical program was presented by the members of the hospital staff: "Carcinoma of the Thyroid," R. T. Richards and L. L. Daines; "Plastic Mobilization of Arm Following an Extensive Bone Injury," A. C. Callister; "Thrombosis of the Popliteal Artery," Earl Skidmore; "Tuberculous Meningitis," O. J. LaBarge; "Chocolate Cyst of the Ovary," F. F. Hatch and J. R. Wherritt; "Osteitis Fibrosa Cystica," S. C. Baldwin; "Albee Operation," W. T. Sheets.

Mrs. Hudson of the Salt Lake City Hourly Nursing Service spoke for a few minutes on hourly nursing, explaining the value of this service to the physicians. William Beer moved that the president and secretary be appointed as a committee to coöperate with the Salt Lake City Hourly Nursing Service. Motion seconded and carried.

The application of George W. Buchanan was read and given to the board of censors for approval.

President C. M. Benedict announced that the postgraduate course of the Utah State Medical Association would be held on September 23 to 26, inclusive. Dr. Don P. Abbott, associate clinical professor of medicine at Rush Medical College, Chicago, Illinois, and Dr. Howard R. Hartman of Rochester, Minnesota, are to conduct the clinic. G. G. Richards spoke on the advisability of making the postgraduate assembly fee \$5 instead of \$10. This was discussed by L. E. Viko and M. M. Critchlow; Fred Stauffer moved that the Salt Lake County Medical Society recommend to the Utah State Medical Association that the postgraduate assembly fee be cut from \$10 to 5. Motion seconded and carried.

President C. M. Benedict announced that on Monday evening, September 23, Dr. Howard A. Kelly of Baltimore, Maryland, would address the Salt Lake County Medical Society on "Doctors' Hobbies." Fred Stauffer moved that the meeting be made a dinner meeting at the Newhouse Hotel. Motion seconded and carried.

The meeting adjourned at 9:45 o'clock.

* * *

The Salt Lake County Medical Society held a banquet for Dr. Howard A. Kelly of Baltimore, Maryland, on Monday, September 23, at 7 p. m.

Seventy-five members and twenty-six visitors were present.

President C. M. Benedict introduced Doctor Kelly, who talked upon the "Doctors' Hobbies."

No business was transacted, and the meeting adjourned at 10 p. m.

BARNET E. BONAR, *Secretary*.

UTAH NEWS

Ophthalmological.—At the annual business meeting of the Utah Ophthalmological Society, held September 16, 1929, the following officers were elected for the ensuing term: President, F. M. McHugh; vice-president, F. R. Slopanskey; secretary-treasurer, W. Leroy Smith.

The regular monthly meetings of the Holy Cross Hospital Clinical Society were resumed for the winter season on the night of September 16.

The following program was presented:

Osteogenic Sarcoma of the Tibia—Drs. Galligan and Walker.

Acute Transient Psychosis Following Pycotomy for Calculus—Dr. W. G. Schulte.

Demonstrations of Pathological Specimens—Dr. T. A. Flood.

A large attendance of members and nurses was present, and the evening was enjoyed. All members are invited to bring friends who are nonmembers to the meetings. Membership is open to all members of the profession who are members of their county and state organizations.

* * *

The regular meetings of the Academy of Medicine were resumed on the evening of September 12. Since then the following programs have been presented at the weekly assemblies, which occur each Thursday evening.

September 12—Some Observations on European Hospitals and Clinics, by Dr. E. L. Viko.

September 19—Different Types of Leprosy (illustrated with plates of local cases), by Dr. LaBarge. Chocolate Cyst of Ovary, by Dr. Wherritt. Bacteriophage as a Therapeutic Agent, by Dr. Tyndale.

September 26—Prostatic Surgery, by Dr. Hatch. Postoperative Collapse of Lung, by Dr. H. Anderson. Menorrhagia Juniorum, by Dr. Middleton.

October 3—Case of Heart-Block (exhibited), by Dr. Sugden. Oral Infections (focal), by Dr. Smith. Ionization in Infections, by Dr. Giesy.

* * *

The meeting of the Utah State Hospital Association was held at the Holy Cross Hospital, Saturday, October 5. The meeting was given up to routine business and the discussion of various points particularly affecting hospital betterment.

OBITUARY

R. W. Born, 1872-1929

Dr. R. W. Born, member of the county physicians' staff and widely known practitioner of Sandy, died October 7 of appendicitis.

Doctor Born was a graduate of the Pacific Medical College of Los Angeles, California. He was licensed to practice in Utah in 1915, and had been engaged in active practice since that time.

He was born at Benton, Ohio, June 14, 1872, and was fifty-seven years of age. He was a member of Mount Moriah, Masonic lodge of Salt Lake, under the direction of which society the funeral was held.

Doctor Born is survived by his widow, Mrs. Lisetta Born of Sandy, and four sons, Robert V. of Los Angeles, Walter W. of San Francisco, Ivan F. of Murray, and John W. of Sandy.

Uniform Registration of Medical Practitioners in Australia.—The Federal Health Council is seeking to have the powers of registration of medical practitioners transferred from the control of states to that of the commonwealth. It is proposed to have a commonwealth registration board for medical practitioners, dentists, nurses, and midwives. So far, four of the states have assented to the proposal, but the remaining two are not in favor. The question will be again considered at the forthcoming state premier's conference.—*Federation Bulletin*, September 1929.

MISCELLANY

Items for the News column must be furnished by the twentieth of the preceding month. Under this department are grouped: Comment on Current and Recent Articles in the Journal; News; Medical Economics; Correspondence; Department of Public Health; California Board of Medical Examiners; and Twenty-Five Years Ago. For Book Reviews, see index on the front cover, under Miscellany.

NEWS

New Hospital Unit Opens.—Formal opening and dedication of Los Angeles County's new \$300,000 acute hospital unit of Olive View Sanatorium took place recently when County Supervisors Wright, Shaw, Graves, and Beaty turned over the key to Dr. W. H. Bucher, general superintendent of the plant.

The new building is of Spanish design. It is 496 feet long, comprising two wards, the east wing of twenty-eight rooms for women and the west wing of twenty-six rooms for men patients. Its maintenance will require the services of thirty employees.

This unit provides the necessary facilities for administering aid to such patients as require special surgical, medical or dietetic treatment. Heretofore these phases of medical treatment have necessitated the removal of patients to the General Hospital or elsewhere.

Olive View Sanatorium was established in 1920 with a capacity of ninety-five beds. At that time there were only seven buildings and the site comprised only 468 acres.

Now there are 150 buildings representing an investment of \$2,500,000. The average daily cost to the county for each patient is \$3.18.

Only tuberculous cases are handled and these are admitted on recommendation of the county charities department, of which W. H. Holland is superintendent.

The Board of Education maintains two schools with a principal and seven teachers for the children.

A total of five hundred employees, including gardeners, is required to man the entire plant.—*Los Angeles Times*, October 10, 1929.

Vacation Courses in Berlin.—Members of the medical profession who are apt to be in Germany in March or October of the coming year may wish to look into the courses which are offered by the Lecturers' Association of the University of Berlin. The courses are held in German, but numerous professors are able to give their lectures in English, French or Spanish. The address of the information bureau of the Lecturers' Association is Kaiserin Friedrich-Haus für das ärztliche Fortbildungswesen, Berlin NW 6, Luisenplatz 2-4.

Barker Lectures at University of California Medical School.—Llewellyn Barker of Johns Hopkins will begin his duties as university lecturer in medicine on November 25. Doctor Barker's course will be given primarily to students and the medical staff of the university, five times a week for four weeks, either as a lecture or as a clinic and will be held at Toland Hall, San Francisco, from 12 to 1 p. m.

Further details will be issued later. Physicians who are interested are invited to be present at these lectures.

Doctor Barker will also take part in the Alumni program on November 22.

Library Packet Service.—The packet service introduced two years ago by Doctor Chauncey Leake at the University of California Medical School library, San Francisco, is being increasingly used by members of the California Medical Association.

On request, material will be mailed to any member of the California Medical Association who desires such service for the nominal cost of mailing.

Medical Motion Picture Films.—Through its Board on Medical Motion Picture Films the American College of Surgeons has given the most careful supervision to this work to insure the production of high-class scientific films, with real teaching value.

The college has no commercial interest in the distribution of these films. However, it earnestly believes that they would be of distinct interest and value to any medical group.

Arrangements for the use of the films should be made through the Eastman Teaching Films, Inc., Rochester, New York.

Aschheim-Zondek Test for Pregnancy.—This remarkably reliable test for pregnancy is frequently given as early as the first missed period. At the request of several physicians, the test will be carried out during the next ensuing months as an accommodation to doctors throughout the state. A charge of \$10 for each test will be made.

Fifty cubic centimeters of morning urine, preferably less than eight hours old, is all that is necessary for the test, which involves the induction of sexual maturity within four days in immature animals.

Physicians may address samples to Dr. Herbert M. Evans, Anatomical Laboratory, University of California, Berkeley, California.

Napa State Hospital.—Announcement is made that on September 26, 1929, C. E. Sisson, M. D., was appointed medical superintendent of the Napa State Hospital, located at Imola, California.

Colver Lectures.—The College of Medical Evangelists announces the second annual series of medical lectures under the Colver Lectureship. These will be delivered by Joseph A. Stucky, M. D., of Lexington, Kentucky, on the evenings of November 5, 6, and 7, 1929 at 8:15 o'clock, Patriotic Hall, Figueroa Street near Washington Street, Los Angeles.

All members of the medical profession, medical students and others interested in medical progress are invited.

These lectures will cover Doctor Stucky's pioneer medical work in the five mountain-locked counties of eastern Kentucky.

November 5—Our Contemporary Ancestors will be given: A picture of conditions among the descendants of the early English settlers in eastern Kentucky, as seen twenty years ago. The appalling and disastrous results of disease and deformity, of ignorance and malnutrition.

November 6—The Salvaging of These One Hundred Per Cent Americans. The purest stock of Scotch-Irish and Anglo-Saxon races on the continent. Isolated for centuries with no intermixture of other races. Families of from eight to twenty living in one-room cabins, without windows. Twenty years of pioneer medical work of the highest scientific type.

November 7—Present Conditions and the Future Outlook. Schools, colleges, dispensaries, and hospitals have blazed the trail. Self-sacrificing nurses, teachers, and physicians have opened the door to health, hope, and opportunity. The romantic story of a college erected as a peace memorial on the battle ground of Kentucky feudists.

This lecture will be illustrated by motion pictures.

CORRESPONDENCE

Subject of the Following Letter: The Right to Use the M. D. Degree

October 10, 1929.

To the Editors,
California and Western Medicine.

It is well known that California contains many graduates in medicine who are not in active practice. The 1927 directory estimates that there were 672 of them. Of these it states that "It is related that these individuals are simply residents of California and not engaged in treating the sick and afflicted." I am not in a position to know to what extent the unfavorable implication is justified, but even laymen are aware that not all bona fide doctors of medicine are in active practice. Some are retired though not superannuated. Others are teachers in our medical schools, or are connected with departments of health or physical education, etc. Some of them are licentiates of other states, while others are not, but the public knows all of them as graduates in medicine, and acquaintances and friends address them as such, and editors of our medical journals voluntarily and customarily add the letters "M. D." after their contributions. They are listed in this way in the directories of educational institutions, on the programs of scientific societies, and in the rosters of these, in directories of men of science and medicine, and not infrequently also in telephone and city directories, both local and metropolitan.

Some of those connected with our medical schools often assist their colleagues and friends in the profession, in diagnoses, or even make them for them, wholly without expectation of any reward, save the satisfaction that comes to all who coöperate for the good of the profession and the public. Indeed, some of these spend considerable time in such unselfish services in connection with hospitals, devoting to this work time that they can ill afford to spare. Among them are men of high standing in their profession and with an international reputation in their field.

It must seem strange that any of these, some of whom have been residents in both state and community for almost a generation, should have been officially informed that they have violated the state Medical Practice Act and are thus guilty of a misdemeanor, because, perchance, the local or suburban telephone directory, or both, carried their name with the abbreviation "Dr." or the letters "M. D."

The paragraph of the law which is concerned here reads:

"Section 17. Any person who shall practice or attempt to practice, or who advertises or holds himself out as practicing, any system or mode of treating the sick or afflicted in this state, or who shall diagnose, treat, operate for, or prescribe for, any disease, injury, deformity, or other mental or physical condition of any person, without having at the time of so doing a valid unrevoked certificate as provided in this act, or who shall in any sign or in any advertisement use the word "doctor," the letters or prefix "Dr." the letters "M. D." or any other term or letters indicating or implying that he is a doctor, physician, surgeon, or practitioner, under the terms of this or any other act, or that he is entitled to practice hereunder, or under any other law without having at the time of so doing a valid unrevoked certificate as provided in this act shall be guilty of a misdemeanor and upon conviction thereof shall be punished as designated in this act."

Surely no one can deny anyone the right to the title of doctor of medicine, if lawfully acquired, and it should be clear that any act which forbade some persons the legitimate use of a lawfully acquired title, while permitting it to others, would undoubtedly be unconstitutional. The implication of the law very plainly is that only the attempt to use this title in an

advertisement and so as to convey the impression that the individual is a licentiate and desirous of practicing medicine is in violation of the act. The paragraph in question specifically states that only those who *represent themselves as entitled to practice medicine*, or who use the "prefix 'Dr.' or the letters 'M.D.' . . ." to indicate or imply that they are "a doctor, physician, surgeon . . . under the terms of this or any act, or that he is entitled to practice hereunder . . ." and so forth, is guilty of a misdemeanor.

Since the use of the appellation "doctor" in daily intercourse carries the implication that the person so addressed is qualified to practice medicine, quite as much as the insertion of the above letters with his name in a telephone directory, anyone who permits himself to be so greeted hence should also be held to violate the state Medical Practice Act, and be guilty of a misdemeanor. Moreover, a parent, grandparent, or nurse also would violate this act if, upon inspection, they decided that little Willie had the mumps, for the act specifically forbids the diagnosing of a disease by anyone except licentiates in medicine under the law. Even a veterinarian whose name appears with the title "Doctor" in a telephone directory should also be held to violate this act, for the presence of this title with his name would just as much convey the impression that he is advertising that he is qualified to practice human medicine.

Our profession often has been reproached with intolerance and narrow-mindedness, and such interpretations as the above do much to justify and revive these charges, and bring reproach and also ridicule upon us, especially so when adopted and promulgated by our official representatives.

Very truly yours,
A. W. MEYER.

Department of Anatomy, Stanford University.

(Editor's Note: The following letters were enclosed by Doctor Meyer as bearing on the points brought out in the above communication.)

* * *

Subject of Following Letter: State Board Letter to Doctor Meyer

Board of Medical Examiners
State of California

Sacramento, California,
July 7, 1928.

Arthur William Meyer, M. D.,
121 Waverley Street,
Palo Alto, California.

Dear Doctor:

Our special agent, Mr. Davidson, recently reported that in the May 1928 telephone directory, page 24, under the listing "Other Cities and Towns" appears the following: "Meyer, A. W., M. D., Residence 121 Waverley, Palo Alto, 1225."

The records of the Board of Medical Examiners do not show anyone by the name of Arthur William Meyer, who is licensed to practice as a physician and surgeon in this state.

May we draw your attention to Section 17 of the Medical Practice Act, a copy of which please find enclosed, which prohibits the use of the suffix M. D.*

Very truly yours,

(Signed) C. B. PINKHAM, M. D.,
Secretary-Treasurer.

(Editor's Note: Section 17 is printed in the preceding letter of Doctor Meyer.)

* * *

Subject of Following Letter: Doctor Meyer's Statement to Secretary of State Board

July 9, 1928.

Dr. C. B. Pinkham, Secretary-Treasurer,
Board of Medical Examiners,
Sacramento, California.
Dear Doctor Pinkham:

I am glad that I have met you several times in the past and that I have such pleasant recollections of those meetings and of you; otherwise I might take very serious offense at the charge in your letter of July 7, that I have violated the Medical Practice Act

in this state. You undoubtedly know that I am a graduate in medicine and was licensed to practice it in the State of Maryland in 1907. The "M. D." after my initials in the local telephone directory was added about ten years ago, at the suggestion of the local manager of the company, in order to avoid daily annoyance from telephone calls for a local plumber resident here. His initials were the same as mine.

I know that neither the local manager of the telephone company nor I had the remotest idea that the inclusion of the letters "M. D." after my name in the list of patrons of the telephone company could possibly be regarded as a violation of the state Medical Practice Act. Moreover, after carefully considering the paragraph of this act, which you thoughtfully enclosed, I cannot believe that any violation is involved by that and successive acts of the telephone company. I readily concede that you and Mr. Davidson undoubtedly are more familiar with the interpretation of this law than I am, but I fail to see how the printing of a name in ordinary type, and without financial consideration, by a commercial company, could possibly make anyone guilty, as you and Mr. Davidson seem to think it does. The directory of the company surely is one thing, and advertisements in it quite another. Moreover, those initials did not appear in any subsequent directory with my especial knowledge or consent.

Under the circumstances, it must greatly interest you to know that my name appears in the same way in official publications of Stanford University, in most of the scientific periodicals in which I have published articles for the last two decades and over, in scientific programs, upon the roster of scientific societies, etc., etc. Hence, if my name as it appears in the local telephone directory violates the Medical Practice Act of the State of California, then surely all the other appearances also do so, and I stand guilty of your charge many times, both with and without my knowledge and consent.

Although it is now wholly immaterial to me whether my name continues to appear in this form in the local directory, I cannot hesitate to express my conviction that the state Medical Practice Act must be unconstitutional if it denies me the right to use the title of Doctor of Medicine in this and similar ways, for it was legally and lawfully acquired. Moreover, I am ready to take steps to test the constitutionality of that act if this privilege is denied me. In fact, Doctor Pinkham, the thing is so ridiculous as to be laughable, and had Mr. Davidson not requested me but last week to testify in a case to come before the board about July 10, I should have been compelled to conclude that you and he had, for some reason wholly unknown to me, joined forces to reflect seriously upon my character. Surely someone must have had a bad dream, or some local friendly enemy, whose existence is unknown and unsuspected by me, must have led Mr. Davidson and you astray. For it is exactly such overzealous activity for the protection of our profession that has so often brought discredit and public scorn upon it, both at home and abroad.

Since you do not mention it I presume you have none, but if you have one iota of real evidence, or if you know of any charges implying that I ever violated any of the medical practice acts of this state, I shall fully expect you to inform me without delay. I ask this especially since I am about to leave for a vacation of some weeks in the mountains.

Since both my character and integrity are involved in the charge brought against me in your letter, I am sending a copy of your letter, with its enclosure, and my reply to President Wilbur and to Doctor Phillips, the president of the State Board of Medical Examiners.

With cordial regards,

Very sincerely yours,
A. W. MEYER.

**Subject of Following Letter: President Phillips'
Letter to Doctor Meyer**
Board of Medical Examiners
State of California

Santa Cruz, California,
September 6, 1928.

Dr. A. W. Meyer,
Stanford University,
California.

Dear Doctor Meyer

Yours of August 28 received. I delayed answering till I could see Doctor Pinkham. You will appreciate the fact that I am not in touch with the current board correspondence down here in Santa Cruz.

When I received your first letter I spoke to Doctor Pinkham, and looked upon the matter as a simple one; a removal of the M. D. in the telephone book would settle it.

Of course you will understand we do not make the laws, we are only administering them. It seems a necessary restriction. If all were M. D.'s, and situated as you are, there would be no need for it. Unfortunately that is not the case, and we who are dealing with these matters constantly, know what would happen were it otherwise. The restriction does as much to protect the profession as the laity.

Please rest assured you were not singled out by Doctor Pinkham for discipline. There is no discipline about it, but, in the discharge of his official duties, he must take cognizance of such matters as are reported to him. I am sure you and he will arrive at an amicable understanding. . . .

Yours sincerely,
P. T. PHILLIPS.

* * *

**Subject of Following Letter: Doctor Meyer's
Letter to State Board Secretary**

September 13, 1928.

Dr. P. T. Phillips,
Santa Cruz, California.

Dear Doctor Phillips:

I greatly appreciate your friendly letter of September 6 and fully realize the good intentions of the board. I will always be ready to facilitate your difficult task in every possible way, but I do not believe that admitting the false accusation against me can possibly redound to the good of our profession. I regret that I cannot recognize the validity of the interpretation of the board for competent, impartial authorities whom I have consulted since your letter was received hold that the state Medical Practice Act was not violated by the way my name was printed by the telephone company in its local and metropolitan list of patrons.

The language of the law necessarily is broad, but there is nothing in it which declares that such an insertion of my name is an advertisement and that, if I understand correctly, is what is implied in the accusation. I realize, of course, that the board did not make the law, but I hope and believe that it was consulted. Moreover, representatives of our profession undoubtedly formulated the bill and requested its passage and hence we cannot justly shift the responsibility for it upon others.

Since I am enclosing a copy of my letter to the secretary of the board, Doctor Pinkham, regarding the matter, I will merely add my warmest regards to you and your son, whom all of us remember very pleasantly.

Cordially and sincerely yours,
A. W. MEYER.

* * *

**Subject of Following Letter: Doctor Meyer's
Letter to State Board Secretary**

September 13, 1928.

Dr. C. B. Pinkham,
State Board of Medical Examiners,
Sacramento, California.

Dear Doctor Pinkham:

There has been a few days' delay in my response to your letters of July 14 and August 31, which were mailed on September 4 and received on September 6,

because I desired to consult competent legal authorities before writing again.

Although you charge me with being guilty of a misdemeanor in your letter of July 7, you nevertheless declare, in that mailed on September 4, that this was not a reflection upon my character or integrity. That it was not your aim to so reflect I willingly admit, but that it did so must be self-evident. Moreover you did not retract the charge, but by implication reiterated it.

I think you will find that I have always been ready to coöperate for the good of the profession, and the implication that I have failed to do so is entirely unjustified. I readily grant that it may be your duty to take action upon what the agent of the board reports, but if, as you imply, you must waive your initiative and judgment, then it necessarily follows that you are his agent and not he yours.

Competent legal authority is of the opinion that the insertion of my name with the letters M. D. in the local and metropolitan telephone directories by the company did not violate the paragraph of the Medical Practice Act which you quoted in your letter of July 4. This, to be sure, is a matter of much gratification to me, but if there are any court decisions bearing upon this matter which may possibly, though not probably, be unknown to my advisers, I hope that you will do me the courtesy of calling my attention to them.

It seems to me that if the interpretation adopted by the board is to stand, then it follows that a grandmother who, on her own initiative, decides that her little grandson has measles and tells his parents so, must also be guilty of violating the act, for it specifically states that anyone who diagnoses a disease is guilty of a misdemeanor.

I cannot believe that the board will claim the right to deny those upon whom the title of "Doctor of Medicine" has been lawfully conferred the legitimate use of it, and I firmly believe that any law which attempted to do so would promptly be declared unconstitutional. What apparently is needed is a term to distinguish the licentiate in medicine from the graduate, but surely the lack of such a term cannot justify curtailing the civil rights of others. If the board desires to insist upon the correctness of its interpretation, it probably would be well to bring a test case for the information of others whose names appear similarly as mine as well as for the good of the medical profession.

With warmest regards,

Very truly yours, A. W. MEYER.

Subject of Following Letter: Narcotic Laws and Enforcement in California

San Francisco,
October 9, 1929.

California and Western Medicine,
Balboa Building,
San Francisco, California.

Gentlemen: I am enclosing herewith a résumé of the law affecting narcotics passed by the last legislature and which became effective August 14, 1929. This does not purport to be a complete statement of all of the provisions of the law, but merely contains those provisions which, in my opinion, are important for the physician to know. There are, of course, other provisions dealing with the outright sales to addicts, the forging of prescriptions, and other practices which are obviously criminal and which no reputable practitioner would be in danger of employing. The regulations to which the statement enclosed calls attention are mainly of a character which an honest physician, unacquainted with the law, might, and sometimes does, violate. It is the purpose of this department to strictly enforce this law and we would appreciate a wide publicity in the medical profession, in order that physicians may not find themselves embarrassed by ignorance of the law.

Yours very truly,

FRANK H. BENSON,

Chief of the Division of Narcotic Enforcement.

Résumé of Recent Law Affecting Narcotics

Physicians cannot legally prescribe, administer or dispense opiates or other prescribed drugs merely to satisfy addiction or to relieve withdrawal symptoms. To do so lays the physician liable to criminal prosecution.

Physicians may submit an addict to the reduction or ambulatory treatment only in city or county jails, or state prisons, or State Narcotic Hospitals, or in institutions approved by the State Board of Medical Examiners, where the patient is kept under restraint or control. Where this treatment is employed in such institutions the narcotics must be administered only by a regularly licensed physician or a registered nurse. The physician, or other person, who gives the reduction treatment otherwise than in the manner described in the act is guilty of a criminal offense and, under the terms of the State Medical Act, is liable to have his license revoked.

The physician, in the regular course of his practice, may, in good faith, prescribe or administer narcotics to his patient for a reasonable time and in reasonable amounts for any disease, ailment, or injury, other than narcotic addiction. He must keep an office record, giving the name of the patient, the pathology for which each treatment is given and the date thereof. This record is open to inspection by the officers of the law.

The physician may prescribe narcotics for any habitual user of narcotics who, in addition to his addiction, has any disease, injury, or ailment for which the physician, in good faith, believes such narcotics are indicated, or whose addiction is complicated by the infirmities of old age. Where the physician so prescribes for an habitual user he must, within five days after the first treatment, and whenever requested thereafter, send by registered mail to the Narcotic Enforcement Division, 302 State Building, San Francisco, a report of such treatment. Cards for making such report will be furnished by the division upon request.

Every narcotic prescription must be dated as of the date it is written, and such date, together with the name and address of the patient and the name of the prescribing physician must be written by the physician himself. The practice of telephoning narcotic prescriptions to be filled and delivered by the pharmacist and later signed by the physician is absolutely illegal and subjects both the physician and the pharmacist to prosecution.

The narcotics referred to herein are cocain, opium, morphin, codein, heroin, alpha eucain, beta eucain, hemp (*cannabis sativa*), or the extracts thereof, chloralhydrate, or any of the salts, derivatives or compounds of the foregoing; provided, that preparations of the United States Pharmacopeia and National Formulary or other recognized or established formulae or other remedies or prescriptions sold or prescribed in good faith for medicinal purposes only and not for the purpose of satisfying the addiction of an habitual user of narcotics, which contain not more than two grains of opium, or one-fourth grain of morphin, or one grain of codein, or one-eighth grain of heroin, or ten grains of chloralhydrate, or four grains of Indian hemp or loco weed in one fluidounce or, if sold in solid preparation, one ounce avoirdupois, are not within the provisions of the law, except paregoric, which may be sold only upon the prescription of a regularly licensed physician.

The foregoing are the principal provisions of the State Narcotic Law insofar as it affects physicians. There are certain federal regulations with which the physician should be familiar. Information concerning these may be obtained from the Internal Revenue Service, Custom House, Washington and Battery streets, San Francisco.

A copy of the state law will be furnished to any physician or pharmacist, or other person interested, by writing to the State Narcotic Enforcement Division.

TWENTY-FIVE YEARS AGO*

EXCERPTS FROM OUR STATE MEDICAL JOURNAL

Vol. II, No. 11, November 1904

From some editorial notes:

... Valuable Contempt.—On September 30 Dr. W. A. Whitlock of Merced was called as a witness in the superior court to give evidence in a case there pending. He gave all of the general evidence asked, but when the attorney for the defendant asked for expert evidence relating to certain facts about a gunshot wound, Doctor Whitlock refused to answer, on the ground that such testimony was expert evidence, and that the witness should receive proper compensation for his time. The court adjudged him in contempt, and sent him to jail, as he persisted in refusing to answer the questions. Later the district attorney visited him in jail and agreed to approve his claim for \$50 if he would consent to testify. This he did, and was released. Doctor Whitlock says: "I went to jail to protect the rights of the profession, and would have been there yet if the district attorney had not come to my terms." . . .

... Another Journal.—In September the oldest medical society in the United States—the Medical Society of New Jersey—commenced publishing its transactions in the shape of a monthly journal, with the title *The Journal of the Medical Society of New Jersey*. . . .

... The policy announced by the journal is one of clean and decent advertising, and the chairman of the Publication Committee writes us that he will do all in his power to see that the advertising pages are kept clean. Too many state society journals have followed the pernicious example of the Journal of the American Medical Association, and have accepted pretty much anything offered. We sincerely trust that New Jersey will stick to the policy announced, and keep its self-respect. . . .

... Watch Them.—This number of the journal will reach you just before election. If you, or your county society, have not asked your nominees for the California state legislature to express themselves regarding their attitude toward the medical law, do so at once. Before election is the time to find out how a man stands; then you can vote accordingly. . . .

... The Swing of the Pendulum.—For years every right-thinking man in the country has known that the advertising pages of the *Journal of the American Medical Association* were worse than rotten; yet no one cared to speak the first energetic word. Your society in California has done so, however, and the ball has started rolling. Note the result: The *Journal of the American Medical Association* has adopted, in slight measure, our rule in regard to printing the formula of a proprietary medicine with the advertisement. They do not make any acknowledgment for the suggestion, and we do not ask it; we only ask that it be done. . . .

From a communication from the Board of Trustees of the American Medical Association to the editor of the California State Journal of Medicine:

... Having criticized the board in your journal (California State Journal), as chairman of the American Medical Association board, I feel that this reply to your open letter should be printed in your journal, and further that you should give your readers the benefit of a complete publication in an early issue of your journal of the entire report. Respectfully, T. J. Happel, Chairman Board of Trustees of the American Medical Association.

Comment by Doctor Jones of California: We take

* This column aims to mirror the work and aims of colleagues who bore the brunt of state society work some twenty-five years ago. It is hoped that such presentation will be of interest to both old and recent members.

pleasure in publishing the above letter from Doctor Happel. . . .

... In regard to the advertising question, if Doctor Happel will kindly have the Journal of the American Medical Association publish a statement setting forth just when and where, in its pages, it printed the full quantitative formula, covering all of the active ingredients of the following preparations, we will be very glad indeed to make any sort of an apology he or any other member of the board may desire: panopeptone, chionia, benolgur, uriform, unguentine, cactina, seng, Kutnow's powder, pepto-mangan, Gray's tonic, listerine, urisepin, ergoapiol, Mey's poultice, tongaline, somatose, aseptinol, chiolin, Colden's liquid beef tonic, hemaboloids, triferrol, arsenauro, gonosan. . . .

From an article on "Some Remarks on Hysterectomy, with Summary Report of One Hundred Cases" by W. W. Beckett, M. D., Los Angeles:

Hysterectomy is indicated on fibrocysts, in all edematous tumors when accompanied by watery discharge, in large tumors causing symptoms, in all fibroids except those suitable for myomectomy and small ones which cause no inconvenience and after the menopause, in malignant disease of the uterus, uterine rupture during labor, chronic endometritis with pustules, in some cases of procidentia, in puerperal sepsis, and in certain other rare conditions. . . .

From an article on "Treatment of Typhoid Fever. Outline of Treatment and Results in Some of the Cases of the Palo Alto Epidemic of 1903" by Ray Lyman Wilbur, M. D., Stanford University:

The object of the present paper is to give in some detail the treatment of the cases that came under my observation during the epidemic at Palo Alto and Stanford University last spring. Some unusual opportunities were presented to observe, within a short space of time, a considerable number of cases, and as a fairly uniform plan of treatment was adopted and seemed to be generally successful, it may be of value to review it. . . .

From the report of the second annual meeting of the Pacific Association of Railway Surgeons—official minutes:

The second annual meeting of the Pacific Association of Railway Surgeons was held in the St. Francis Hotel, San Francisco, on August 17 and 18, 1904. The meeting was called to order by the president, Dr. W. B. Coffey of San Francisco, who read the following address:

Gentlemen: In calling this meeting to order, let me congratulate you at the goodly number present. It is an evidence of rapid development and augurs well for the future. A little more than a year ago our society had its conception, and at the meeting in 1903 it became a full-born, a full-fledged child. At that time I briefly outlined its purposes and objects. . . .

From county medical society proceedings:

... To the Members of the San Francisco County Medical Society—Gentlemen: Your Nominating Committee herewith respectfully presents the following names to fill the various offices and committees for the ensuing term. Signed: S. S. Kahn, William Fitch Cheney, H. A. L. Ryfkogel, Committee.

For president, Emmet Rixford; first vice-president, Philip King Brown; second vice-president, Lois Nelson; secretary, A. W. Hewlett; H. E. Alderson, nominated by W. F. Barbat, seconded by T. V. Huntington; assistant secretary, James Pressley; treasurer, F. R. Dray; librarian, W. I. Terry; trustees, H. Gibbons Jr., W. W. Kerr, L. L. Dorr. . . .

DEPARTMENT OF PUBLIC HEALTH

By W. M. DICKIE, *Director*

Vital Statistics Fee Is Raised.—In accordance with the provisions of recent legislation amending the Vital Statistics Act, the fee for certified copies of birth, marriage, and death certificates has been increased from fifty cents to one dollar for each such certified copy. Similar increases are scheduled for searching records.

Stanislaus County Votes for a Full-Time Health Department.—The supervisors of Stanislaus County have taken definite action toward the organization of a regulation county health department with a health officer to serve full time and adequate staff of nurses and sanitary inspectors. Stanislaus County is the eleventh county in California to organize a health department upon a full-time basis.

San Luis Obispo Controls Smallpox Epidemic.—Smallpox made its insidious appearance in San Luis Obispo during the month of July. Most cases of the disease were of a mild type. Investigations by Dr. Allen F. Gillihan, county health officer, revealed the fact that unreported cases had occurred within the county as long ago as last May. A total of fifty-six cases occurred. Through the coöperation of the mayor of San Luis Obispo a special vaccination clinic was opened August 12. During the month following that date no less than four thousand individuals were immunized against the disease.

The Approval of Clinical Laboratories.—The approval of laboratories by the State Board of Public Health, which is required by law for the official public health laboratories operated in conjunction with health departments, is extended to the clinical laboratories of the state on a voluntary basis.

The conditions for such approval and the procedure for obtaining it are as follows:

Application is made by the director on a form which calls for information regarding the education and experience of the director, the physical equipment of the laboratory and the type of work done. The applicant agrees to preserve, for a definite period, diagnostic slides, both positive and negative, to use official methods in the examination of milk and water, to keep an accurate record of daily work, to file reports with the state laboratory when requested, and to examine and report on check specimens that may be submitted by the state laboratory.

An inspection of the laboratory is then made and the director interviewed as to methods, personal qualifications, personnel, etc. Finally, the application, with data is referred to the State Board of Public Health for action.

One condition for approval is that the responsible workers in the laboratory shall possess the certificate of proficiency issued by the Department of Public Health on examination. Separate certificates are issued for each of the four divisions of the work—bacteriology, serology, parasitology, and biochemistry.

A single individual may possess one or all of these certificates. A laboratory may be approved, with only one type of certificate, if no work is done excepting that which is covered by that certificate.

Certificates of approval that were issued before the requirement of a certified personnel came into operation (Resolution of the Board, November 12, 1927) will be continued until January 1, 1931, after which date all laboratories, to retain the certificate of approval, must have certified assistants. There must be at least one certificate of proficiency in the laboratory for each division of the work (bacteriology, serology, parasitology, biochemistry) that is performed in the laboratory.

Laboratory workers who do not have the certificate are classed as apprentices, and may work only under the direct supervision of the director of the

laboratory or of a person possessing the certificate of proficiency.

Certificates of proficiency are issued in two grades, junior and senior. Those who make a passing grade in the examination, but do not give evidence of qualifications necessary for the responsibility of running a laboratory alone, will be given the junior grade certificate. Persons holding junior grade certificates may be permitted to perform tests in the temporary absence of the director or of the person holding the senior grade certificate. Apprentices may not perform any tests in the absence of the director of the laboratory or of a person holding either the senior or junior certificate for the work in question.

Directors of laboratories are not required to personally hold the certificate of proficiency, so long as their personnel hold certificates, but before a laboratory can be approved its director must present satisfactory evidence of education and experience, in addition to the medical degree.

Laboratories, the directors of which do not devote their whole time to that particular laboratory, may be approved only when full-time assistants possessing the senior certificates are employed.

A change in directors automatically cancels approval and the new director should return the old certificate and file a new application for approval.

The next examination for the certificate of proficiency, all divisions, will be held in Los Angeles and in Berkeley some time in November, the exact date to be announced later.

Information regarding the scope of examinations, credits for education and experience, etc., and application forms will be mailed on request. Inquiries should be addressed to Dr. W. H. Kellogg, Chief State Bacteriological Laboratory, University of California, Berkeley.

Cases of Reportable Diseases, California:

Disease	1928 to Aug. 31	1929 to Aug. 31
Actinomycosis	1	4
Botulism	4	9
Chickenpox	15,207	13,161
Coccidioidal granuloma	21	27
Diphtheria	3,330	1,870
Dengue .....	.....	3
Dysentery (amebic)	35	41
Dysentery (bacillary)	75	630
Encephalitis (epidemic)	39	75
Erysipelas	540	602
Food poisoning	110	130
German measles	8,858	857
Gonococcus infection	3,720	3,800
Hookworm	10	7
Influenza	1,147	5,159
Jaundice (epidemic)	6	6
Leprosy	15	13
Malaria	41	64
Measles	3,677	2,610
Meningitis (epidemic).....	157	607
Mumps	7,769	12,092
Ophthalmia neonatorum	14	24
Paratyphoid fever	28	77
Pellagra	49	50
Pneumonia (lobar)	2,369	2,599
Poliomyelitis	228	119
Rabies (animal)	530	537
Rabies (human)	3	2
Rocky Mountain spotted fever.....	8	13
Scarlet fever	5,046	11,438
Smallpox	814	1,827
Syphilis	5,126	5,486
Tetanus	59	50
Trachoma	93	80
Trichinosis	19	2
Tuberculosis (pulmonary)	7,024	7,220
Tuberculosis (other forms)	401	341
Tularemia	3	10
Typhoid fever	462	416
Typhus fever	2	1
Undulant fever	5	38
Whooping-cough	7,229	7,665

CALIFORNIA BOARD OF MEDICAL EXAMINERS

By C. B. PINKHAM, M. D.
Secretary of the Board

News Items, November

According to reports, an institution known as Acme X-Ray Laboratories is alleged to be selling or attempting to sell two thousand associate membership certificates to dentists as well as physicians and surgeons in southern California on the following plan: \$20 is reported charged for the "Associate Membership Certificate" which the applicant pays by sending seven patients to said institution for x-ray work. As soon as these seven patients pay for the x-ray service, a receipt for \$20 in payment for associated membership and a check for \$1 is mailed to the doctor. Thereafter the doctor is paid \$3 for each patient that he sends to the institution, which, according to the articles of incorporation, is a nonprofit corporation organized under the laws of California. Query is made as to what reaction patients would have if they knew that the doctor member of this corporation, in addition to his fee for treatment, received a part of the money which the patient paid for x-ray.

An applicant seeking license to practice in California recently presented a diploma from the "College of Cinesi-therapy-Manipulation," issued in Denver, Colorado; however, the Colorado Board of Medical Examiners reports they have no knowledge of the alleged institution.

"Dr." William McBride, who posed as a traveling physician and radium eye specialist in bilking the afflicted ignorant of Oregon out of life savings two years ago, will be returned to that state through extradition papers granted today by Governor C. C. Young. Although "Dr." McBride was granted probation in Oregon on the promise he would never again engage in his nefarious practices, he was arrested a short time ago in El Centro, Imperial County, on an identical complaint. McBride is now serving a brief term in Imperial County for practicing without a license, and immediately upon the expiration of that sentence later this month, he will be returned to Hillsboro, Oregon, to serve a twenty-year term for larceny, five years on each of four indictments, to be served consecutively. Posing as an expert on radium, "Dr." McBride told persons suffering from eye trouble they faced certain blindness unless they went to a specified institution. But the price of the trip and treatment was set by McBride at such an exorbitant figure they pleaded with him to operate on them in their homes. McBride administered his treatment, which left the patients worse than before and in one case caused total blindness. He extorted from them what money he could, the sums ranging from \$100 to \$250. He trafficked among the uneducated and the gullible both in Washington and Yamhill counties. McBride was arrested in Seattle in 1927 and retaken to Hillsboro and pleaded guilty to four grand jury indictments (Sacramento *Bee*, September 18, 1929). (Previous entries, April and May, 1929.)

Dr. R. M. Ritehey was today appointed medical superintendent of the Mendocino State Hospital at Talmage, according to an announcement by Director of Institutions Earl E. Jensen. The appointment becomes effective October 1 (Burbank *Review*, September 30, 1929).

Suit for a writ of review of the evidence on which the State Board of Medical Examiners revoked his license for two alleged illegal operations was filed today in Superior Court by Dr. Fred B. Tapley. His complaint charges that, inasmuch as he was acquitted by the jury in Marysville, the state board exceeded its authority. His license was revoked July 16 (San Francisco *News*, September 5, 1929).

"No doctor of medicine who is not also a graduate of some recognized school of chiropractic and actually engaged in the practice of chiropractic shall ever be qualified to become or act as a director or trustee of this corporation." That is one section of the articles of incorporation filed yesterday with Secretary of State Frank C. Jordan by the Battle Creek Hospital, Ltd., formed in Los Angeles County for treatment of disease by chiropractic and osteopathic physicians and surgeons . . . (Sacramento *Union*, September 14, 1929).

Special Agent Carter reports that J. E. Bartel on October 7, 1929, pleaded guilty in Long Beach to a charge of violation of the Medical Practice Act and was sentenced to pay a fine of \$500 or serve one hundred days in the city jail, sentence being suspended for two years. Bartel claims to be a graduate of the Starling Medical College, Ohio, and licensed in Oregon in 1892, which has not been verified.

Reports relate that Madame E. Bailey pleaded guilty on October 8 at Santa Ana to a charge of violation of the Medical Practice Act and was sentenced to serve sixty days in the county jail; sentence suspended.

Annabel Button is reported to have pleaded guilty in Bakersfield on October 7 to a charge of violation of the Medical Practice Act and was sentenced to serve ninety days in the county jail, sentence being suspended on condition she does not again advertise as a doctor or treat the sick or afflicted until licensed so to do. She is alleged to hold a chirothesian certificate, for which she alleges she paid \$300 and, according to her statement, this certificate was supposed to "protect" her.

Armando Dominguez, forty-eight, Chino's "miracle man" and self-styled "healer," was yesterday denied probation by Superior Judge Charles L. Allison on a charge of practicing medicine without a license and sentenced to serve 180 days in the county jail and fined \$200. The jail sentence was suspended . . . (San Bernardino *Sun*, September 15, 1929). The records of the Board of Medical Examiners show that between 1915 and 1921 Dominguez was brought into court on five occasions and that he was arrested twice in 1921 and once in 1924, it being asserted that Dominguez is one of the most persistent and flagrant violators of the Medical Practice Act in southern California.

H. H. Gormley, who claimed to have been a practicing physician in New York some years ago, was convicted by a jury in the Superior Court of having violated the State Narcotic Act. Gormley is alleged to have sold a preparation containing narcotics to an informer employed by the State Board of Pharmacy. During the course of the trial Deputy District Attorney Paul O'Neil developed the fact that Gormley had been deprived of his license to practice medicine in New York through having been convicted of a felony and sentenced to prison there. The charge in that instance was for performing an illegal operation . . . (Sacramento *Bee*, September 24, 1929). Records relate that, on September 30, H. H. Gormley was sentenced to serve nine months in the Sacramento county jail.

Asserting he had been libeled in four articles printed in the C. C. A. Bulletin, Bert H. Humason, former chief inspector for the State Board of Chiropractic Examiners, yesterday filed a damage suit for \$110,000 against the California Chiropractic Association, all of its officers and many of its individual members. Humason alleged that one of the articles referred to accused him of "inordinate, unnecessary and vicious activities" in connection with the arrest of Dr. Charles Cale, recently convicted here on charges of unprofessional conduct . . . (Los Angeles *Illustrated Daily News*, October 1, 1929).

CALIFORNIA AND WESTERN MEDICINE

VOLUME XXXI

DECEMBER, 1929

No. 6

INDIVIDUALISM IN MEDICINE*

By W. S. THAYER, M. D.
Baltimore, Maryland

THESE are days of what the world calls "large business" and of coöperation in all phases of life. In the world's current the medical art has been carried along with all other activities. Things are done on a large scale. Wholesale methods have invaded the practice of medicine as surely as they have commerce. Large institutions and large corporations feel obliged to provide medical care for their personnel. Where forty years ago a man practised for a lifetime alone, or with, perhaps one assistant, today men begin the practice of medicine in groups. One does not consult a physician, he consults that which is called a "clinic." And nine times out of ten the word "clinic" is misused, as the one thing which the ordinary so-called "clinic" does not possess is a bed. The patient consults not one physician but a group of doctors, and, on many sides, regret is expressed that the personal influence of the family physician is going out of existence. The outward appearance of the world changes rapidly with time. Boys and girls look and behave differently, and the old shake their heads and lament and call the world degenerate just as they always have. Through it all the pendulum of custom and fashion swings away from one extreme to the other, while the old world rolls on, and whatever variations the chart of human progress may show from decade to decade, or century to century, mankind slowly continues to improve. But man is a fairly old animal on this earth and while the curve of human progress has its ups and downs and the pendulum of fashion and custom swings away from one extreme to another, yet the fundamental characteristics of the individual human being and his needs remain pretty much the same. We lament the disappearance of the family physician. From certain standpoints such a lament is thoroughly justifiable, but we sometimes forget how infinitely better off the average human being is than he was in the days of the old-fashioned family practice.

Think for a minute of the difference between the duties of the young man starting out in medical practice today and those which confronted his grandfather in a day when we knew little or nothing about the cause of infectious

disease. The physician's duty then, lay almost entirely in the care of the sick or the wounded. The best that one could do in those days was to protect one's patients from direct contagion. That was all. And even then how blind we were. Today the element of prophylaxis plays a large part in medical practice. As Sir Robert Philip beautifully expressed it, two years ago in his address before the British Medical Association, the physician today is a gardener in the garden of health. His main object is to keep the human plant free from disease and to see to it that from year to year the quality of the human flower is improved. It would be a poor gardener who fancied for a minute that his main problem was caring for diseased plants. With plants we regard that a waste of time. This is perhaps the greatest change that has come over medical practice, that is, the realization by physician and public that the doctor's main function is prevention of disease and instruction of his patients as to how to escape disease; that the care of disease is becoming more and more the occasional rather than the main function of the doctor. The day will never come in our time or in the time of our children's children when care for the sick will not be a sacred function of the doctor. But more and more his most vital task is coming to be that of an adviser and protector against disease. Think of our powers in the protection against contagions such as diphtheria and scarlet fever, malarial fever and yellow fever, typhoid fever, cholera and plague and tuberculosis, most indeed of the most dreaded scourges of mankind. And consider how generally now the physician in the care of the individual patient, is concerned in safeguarding the welfare of the family and the public at large. This is perhaps one of the greatest changes that has come over the general practice of medicine within the last several generations. But think also of the immense advances in our knowledge, physical, chemical, physiological, bacteriological, serological, which have brought this about, and consider how much more difficult and how much more complicated the practice of medicine has become. We have an immensely greater power than we had in the past. Our knowledge has increased tenfold. But that knowledge and that power have been gained by an insight into the complexities of human physiology and pathology the acquisition of which has been gained by

* Address delivered before the Utah State Medical Association on July 3, 1929.

years of study; the transmission of which to the student demands an education much broader than it was, a preparation much longer and more time-taking, and the daily employment in practice of methods of study, physical, chemical, bacteriological, serological, more complicated than anything of which our grandparents dreamed. Thirty or forty years ago a man with his microscope and a little laboratory in his house could alone do most of the work that was necessary or desirable in his general practice. Today that is impossible, and, in order to satisfy his conscience, he turns often to the assistance of the laboratory technician. The establishment of local, city or county laboratories or health centres is bringing such means more and more within the reach of practitioners in the larger centres and in outlying districts and, by and large, there can be no doubt that the average human being is immeasurably better off than he was in the seventies or the eighties before specialization became so general. But human customs and fashions swing as a pendulum, and we seem by nature unable to restrain ourselves from going to excess. Let us consider some of the fashions in which we drift toward excess at the present time.

I. NEGLECT OF THE DIAGNOSTIC ART

No man can be a first-class general practitioner equally skilled in all branches of medicine. No man can be a practitioner of general medicine, master of the fundamental methods of diagnosis and treatment and at the same time skilled in all the technical details of bacteriological, serological, physical and chemical diagnostic procedures. He must call upon his friends and neighbours, upon private, city or county laboratory, from time to time for help or assistance. But this assistance while valuable, is not the essential element in practice. If he be a properly trained man this assistance, helpful as it is, is usually confirmatory. Certain fundamental capacities must be his; without them he cannot properly practise medicine.

He must have had a reasonably good anatomical and physiological basis. He must have had a good training in pathological anatomy and a familiarity with gross and microscopical pathological changes, and he must have a good basic knowledge of pathology in its true sense, that is, of the science of disease; a knowledge as to the ætiology of the contagious diseases, the manner of their origin, the dangers of contagion; a reasonable acquaintance with the physiological processes, normal and pathological, associated with diseases of the lungs and heart, the gastro-intestinal and genito-urinary tracts; a fair knowledge of the anatomy and physiology of the nervous system; and he must know how to apply this knowledge in reaching a diagnosis. He must know how to use his five senses in detecting changes in the internal organs, organic and functional, including a familiarity with the simpler instruments of exploration, stethoscope, ophthalmoscope, laryngo-

scope; that is, he should be as good a physical diagnostician as were the well-trained physicians of 1890. Without this basis a man cannot practise medicine intelligently. In order to be a good physical diagnostician one must study and practise daily the art of physical diagnosis on living patients. He must be capable by inspection and palpation and percussion and auscultation to make out the size and position of thoracic and abdominal organs, to determine the presence of fluid or air in the chest or the presence and significance of intrapulmonary changes. He must be able to detect and distinguish that which is unusual from that which is abnormal. He must be a pathologist good enough to be able to interpret those physical signs so as to have a clean-cut opinion of his own. He who has reached this point has acquired the necessary feet on which to stand. He, alone, can profit by the diagnostic refinements of recent years. To him the great mass of information brought to us in the past forty years by the newer methods of diagnosis, physical, such as the x-ray, the polygraph, the electrocardiograph, chemical, such as the beautiful and rapid modern methods of determining the quantitative variations in many constituents of the body fluids, the nitrogen partition, the amount of sugar in the blood, the CO_2 volume per cent, bacteriological, such as those afforded by the efficient methods of culture from the circulation, and serological, such as the determination of complement fixation or agglutination—to him such information as this is intelligible and immensely helpful. To him who has not acquired that which will, I fancy, for all time be the necessary foundation for the intelligent practice of medicine, namely the art of physical diagnosis—to him who has not acquired this the reports of special tests or observations by another are, too often, worse than useless. Every one of these reports is complementary to this necessary basis, the fundamental power to make an intelligent physical examination and to interpret one's results. He who cannot interpret that information which is to be elicited by an accurate physical examination is helpless. No one can do it for him. Least of all the technician who furnishes him a chemical report or sends him an account of a roentgenogram.

The man who depends upon an x-ray alone to make a diagnosis of pneumonia is a danger to the public. What is roentgenology but the study of lights and shadows; he who would make a positive diagnosis of pneumonia from a shadow alone is guilty of a rash and temerarious act. The information supplied by an x-ray plate is often of immense complementary value. Alone and without the information afforded by the history, the appearance of the patient and the results of physical examination, it is often of no more value than that afforded by percussion alone—indeed less. For he who percusses the chest cannot fail to observe the patient. No one technical advance in my lifetime has been of greater diagnostic aid to the practitioner than the introduction of roent-

genology. Yet I regret to say that the pendulum of medical fashion in its almost automatic swing, has led many worthy men to neglect the teaching and the practice of physical exploration to such an extent that it is sadly common today to find men who regard themselves as clinicians ready to accept the report of a roentgenologist utterly incapable himself of making a physical examination; too often, indeed unable to make a proper physical examination themselves. This is not to practise medicine. The roentgenologist may be a man of good general medical training who has had a considerable clinical experience, who follows his patients to operation or necropsy or recovery and confirms his suspicions by a study of the results; or he may be a pure technician whose opinion, gained in the laboratory alone, is of little value. Neither physician nor roentgenologist is capable of expressing an opinion of value if he be not a fairly good pathological anatomist.

II. THE LACK OF COÖPERATION

And then there is another point—the understanding and practice of true coöperation. Neither practising physician nor roentgenologist should be willing to give a flat-footed opinion without consultation, one with the other. The physician who desires a plate should always, in writing or personally, consult with his colleague, give him the benefit of his information, and if there is any question of an unusual appearance or pathological change he should always see the plates himself before expressing an opinion. One cannot “pass the buck” in medicine. One must play the game. And one must play fairly and squarely and openly with his colleague.

I have spoken elsewhere of an instance of congenital cardiac disease in which the patient consulted a roentgenologist without communicating to him the history. The family physician knew from definite physical signs that the manifestations were due to an open ductus Botalli and rightly suspected that the paralysis of the left recurrent laryngeal nerve from which she suffered, was dependent on pressure on the nerve by a dilated pulmonary artery. The roentgenologist promptly interpreted the enlarged second curve on the left of the cardiac shadow as evidence of a dilated left auricle, and unhesitatingly informed the physician that her patient was suffering from mitral stenosis with an enlarged left auricle pressing on the recurrent laryngeal.

A simple physical examination with the history of the case and a little intelligent coöperation would have settled the question.

Nowhere is the lack of proper coöperation more evident than in the diagnosis of pulmonary tuberculosis. Certain shadows on plates of the chest are suggestive, almost convincing sometimes, of tuberculous changes. But a proper interpretation of the plates can never be made without a careful consideration of the clinical history and physical signs. Too often, alas, in everyday practice, the clinician demands and accepts the unaided diagnosis of the radiologist who may give important

testimony but is quite incapable of expressing a positive opinion unless he is a good clinician and familiar with the history and actual condition of the patient. There is a deplorable tendency today to demand of the roentgenologist, and to accept from him positive opinions which are quite unjustifiable.

This was strikingly evident during the war when at the outset considerable numbers of healthy individuals were returned from Europe as tuberculous as a result of the thoughtless acceptance by clinicians of unjustifiably positive diagnoses by young and inexperienced roentgenologists without clinical basis.

The fault is on both sides; it is a sad lack of proper coöperation. Were it not tragic sometimes, it would be ridiculous, the implicit confidence which some physicians place in the roentgenologist's report, and the finality with which the roentgenologist sometimes expresses himself with regard to appearances which can be intelligently interpreted only after a careful consideration of the history, the physical examination, and the clinical course of the case.

As any clinician of experience knows, there are instances of pneumonia in which at times obvious intrapulmonary changes fail, for some time, to cast a shadow. In one instance, indeed, I have known this to be true several hours before death in what proved to be a grey hepatization, confirmed at necropsy a few hours later. Exception? Yes, but exceptions that one cannot afford to forget.

Again, the extreme reserve with which one should pass judgment on defects in the gastric outline in connexion with the suspicion of organic disease is familiar. Simple peripyloric adhesions or pressure by adjacent masses may result in pictures which, if not very carefully considered and controlled, may lead to unfortunate error.

It is a sad commentary on human weakness, the manner in which the discovery of a new method of investigation of great help, such as roentgenology, has led the medical public to neglect those fundamental methods of study which are far more important in themselves. It is very important for us all to remember that while roentgenology has greatly strengthened our diagnostic power it has not simplified the procedure necessary to make an accurate diagnosis. In some instances it has revealed what we could only suspect before, and sometimes that which we have not suspected. More often the results are confirmatory of that which the good clinician has already suspected. From the shadow alone, without a suitable physical examination, we should make far more errors than we should, or did, by well carried out physical diagnosis before the days of roentgenology. It is poor practice to pass the buck, as it were, to the roentgenologist, and accept his diagnosis which is based on information inferior to that lying under the eyes of the clinical attendant. The same is true with regard to every other special diagnostic method. None of these can be utilized properly unless associated with

the results of a careful clinical study. All are complementary to proper clinical study. If it be necessary, and it undoubtedly is, for the laboratory student to devote himself largely to his own special branch, whatever that may be, so is it also vital that the clinician should be master of the art of physical exploration. To practise medicine they must work together and coöperate loyally.

III. THE ABUSE OF SO-CALLED COÖPERATIVE METHODS—THE INDIVIDUAL RESPONSIBILITY OF THE DOCTOR

As I said in the beginning, with all the changes in our fashions of practice, the character of the human being and his needs remain essentially the same, and it is just as true today as it was one hundred years ago, that on the average the doctor accomplishes more by his intelligent human interest in and his individual attention to the patient than he does by anything else. He cannot give proper attention to his patient unless he is his trusted friend and adviser, and unless he shoulders the responsibilities imposed on him by the human being who seeks his advice. Coöperation is absolutely necessary properly to practise medicine today—coöperation between the practitioner and those colleagues whose advice he must seek with regard to certain studies which demand the attention of a special student. But the practitioner must also coöperate with his patient. For the patient who consults him he must take a heavy, individual responsibility.

This leads me to the main point in this talk, namely, the nature of this responsibility and the fashion in which I think it is often misunderstood. In order to meet the problems before them, physicians today are very commonly banding together into groups representing the various branches of medicine and surgery. And more and more commonly it is becoming the custom to send the patient at the outset from one physician to another, letting one man, let us say, examine the thorax, another the abdomen, another the genito-urinary tract, another the nose and throat, another the eyes, another, perhaps, the nervous system. This procedure is sometimes carried out in a rather routine fashion. And the men who do this say often with great earnestness, that one has no right to examine a patient without doing all that he can, and that he who neglects a thorough examination may pass over the vital point. I respect this argument, but, at the same time, I believe it to be fallacious. Such so-called "clinics" rarely succeed in reaching as satisfactory a conclusion with regard to the condition of the patient, they rarely succeed in helping the patient as do those individuals who assume, at the outset, an individual responsibility for the patient, and consider each patient as an individual. Such routine treatment is easier; it is sometimes necessary under local conditions and circumstances, but where it is possible the physician should always, it seems to me, seek to do what he can individually at first. He cannot pass the history taking entirely to a younger man. If the history be taken by another, he must go over

this at length with the patient himself. He must examine the patient thoroughly himself and he must determine himself when it is necessary to seek special advice and from whom such advice is desirable. The human element is still the most important element in the practice of medicine. It is not *a* gynecologist whose opinion I desire with regard to Mrs. X. It is *the* gynecologist. With regard to difficult matters in connexion with the ear or the accessory sinuses of the nose, it is only a skilled colleague whose opinion I desire; it is *the* rhinologist whose personality and special qualifications seem to fit the individual and the situation. One should never send a patient to another without having a good reason for so doing. He would be a sorry practitioner of medicine who had not some opinion of his own with regard to most matters concerning which he seeks advice before he refers the patient to another. In my experience I have known very few so-called "diagnostic clinics" the opinions emanating from which have a value equal to that of one really good man who had given time and consideration to his patient. Again the patient is often sadly misled by the complicated reports put in his hands. These reports often fill him with suspicions, fancies and uncertainties. It is very easy to write down for a patient the results of a collective examination but to write a letter to the patient summing up the result of one's studies in the language which will best explain to him the important points; which, at the same time, will help him and guide him on the way that he should go, and give him the courage without which he can do little—this is one of the most difficult tasks in medicine. This is a task which can only be carried out by that patient's individual physician, at least by that physician who has given his time and thought to a careful examination and study and direction of the investigation of his patient. Some, alas, of these "diagnostic" groups are doing exactly what so-called Life Extension Institutes have done, with the same good intentions and, I firmly believe, often with the same evil effects. Such fashions of procedure eliminate the necessary individualism from practice and substitute for it that which is wrongly regarded as coöperation. I do not mean to condemn those associations of physicians, practising different branches of the medical and surgical art, which render it easier to make a combined examination of the patient when necessary, but I do feel that the so-called coöperative practice on a large scale is bad medicine. It is often true that a study made by such a group is less complete than that made by a single man. The difference between the examination made by a group and that by a single careful man who consults his colleague when necessary, is much like the difference between a book on medicine written by a group of men and that written by a single careful student. In the former there are good chapters but many holes. Try to look up some recondite question in some of these "systems." The lack of completeness that is evi-

dent everywhere is despairing. The doctor cannot escape an individual responsibility for the patient who consults him and he cannot escape the penalty that medical advance has put upon him—namely that he must give more time to the individual than he used to.

The assistance that the practitioner of internal medicine most needs is that afforded by studies in the physical, chemical, bacteriological and serological laboratories. More and more in larger cities, physicians practising general medicine are coöperating in a valuable and practical sense, in that although independent in practice they so arrange their consulting rooms as to be adjacent to a common laboratory in which mutually, they are able to employ the necessary technicians and to provide the necessary apparatus. In this manner they are enabled, at a moderate expense, to gain the information which is so often desirable. This is intelligent coöperation and enables the practitioner to maintain the position which he should seek to hold, of friend and director and adviser to his patient—an adviser who consults his colleagues not as a routine practice but for a reason—who considers not only his patient's body but his mind and his pocket—who is conscious of the heavy responsibility which he assumes in giving medical advice. Believe me, he who does not assume the responsibility for his patients, who does not consult with his consultants, is a poor practitioner of the medical art.

But I am answered: "You are an old fogey. These are not business methods. The man who does that kind of thing can't begin to see a sufficient number of patients to earn his living." But that is just the point. Medicine is regarded by too many of our colleagues as a business. It is not. It is a profession, and he who makes it a business degrades his profession, and is not doing the square thing by his patients. For a few successful surgeons, for a few specialists and fewer men in general medicine who acquire especial skill or especial reputation, it is possible to make a large income, but to gain riches in medicine, for him who does not combine his practice with business interests of another sort, is difficult, indeed almost impossible. However, to make one's living respectably is the privilege of almost every honest medical man. The regarding of medicine as a business by some has had a sad influence on the reputation of the medical profession as a whole. Every physician gives, of course, a considerable part of his time to practice which is to a great extent, gratuitous, but the man who assumes the right to make up for this by making exceptional charges to those whom he fancies are well-to-do and can afford to meet them; in other words, the man who speculates on his patients has brought ill repute to the profession. A man should know what he charges for a certain service and charge it whenever there is no question, and reduce it when he feels that he must; but the well-to-do have a perfect right to resent exceptional charges.

Often enough he whose income may be large has demands which are larger, and it is not for me to determine the charities which my neighbour may choose to support.

Let me sum up in a few words the theme of my talk.

1. The great advances, diagnostic and therapeutic, of the last several generations are leading us sometimes to forget that while they have enlarged our conceptions, have increased our diagnostic powers, have strengthened our therapeutic art, while prophylactically and therapeutically, indeed, they have sometimes replaced our former groping methods by accurate, almost specific means of prevention and cure, yet from a diagnostic standpoint, in scarcely a single instance have they replaced the necessity for the older, simpler methods of physical exploration. These remain fundamental and vital, and he who is not a master of the art of physical diagnosis in the stricter sense, is not only unable to use or evaluate properly the results of those newer methods of study, physical, bacteriological, serological, chemical, which are purely complementary to the basic physical methods—not only is he unable to use them properly, he is often misled by them. The practitioner of medicine must be, before all, a master of the art of physical exploration.

2. Secondly, properly to practise medicine one must assume the responsibility for his patient. He must remember that on his human understanding and on his personal advice and encouragement and explanation depend that patient's health and future. He cannot pass that duty to another. He must make use of an increasing number of special methods of study which often have to be pursued by colleagues, but in making use of these he must do so intelligently, consulting with his colleague. Only in such manner can he obtain the full assistance which he desires. Coöperation in the mere sense of division of responsibility is not coöperation. The doctor consulted by the patient must still regard himself as the patient's individual adviser if he desire to do his whole duty and obtain the best results.

3. He will practise better medicine who coöperates with his colleagues in the sense of uniting perhaps with a number of other practitioners who between them support those laboratories and technicians necessary to supply them the desirable physical, clinical, roentgenological, bacteriological and serological assistance; who takes the responsibility for his own patients; who determines his consultations and chooses his consultants according to the individual conditions; who remembers that the practice of medicine is an affair between two human beings in which the human element is all important and cannot be avoided; that the practice of medicine is a profession; that he who seeks to make it a business or a trade has mistaken his calling.

1208 Eutaw Place.

PANCREATITIS—ITS TREATMENT, AS RELATED TO GALL-BLADDER INFECTION*

REPORT OF CASES

By J. H. BREYER, M. D.

Pasadena

DISCUSSION by C. G. Toland, M. D., Los Angeles; Clarence E. Rees, M. D., San Diego; Charles A. Dukes, M. D., Oakland.

SURGICAL diseases of the pancreas are not frequent. Unless a surgeon has seen several cases of acute pancreatitis, or unless he continually keeps this condition in his mind, he will fail to make a correct diagnosis before opening the abdomen. However, diseases of the pancreas associated with biliary tract disease are not so rare as formerly supposed.

INCIDENCE

In 1907 Egdahl reported a series of 105 cases of acute pancreatitis, forty-four of which were associated with gall stones. In a series of chronic pancreatitis cases reported by Deaver in 1921, 91 per cent showed evidence of biliary infection. In 1921 Judd found pancreatitis present in 26 per cent of 1290 cases in which operations were performed for biliary tract disease. In 1923 A. O. Whipple reported 230 cases of unselected biliary tract disease. Forty of these showed definite pancreatic changes. This emphasizes that in all operations in the upper abdomen, and especially on the biliary tract, the pancreas should be thoroughly examined.

The object of this paper is more definitely to crystallize our ideas about pancreatic lesions associated with biliary tract disease that our patients may be given full benefit from every surgical procedure. The surgical treatment must be based on the essential pathology.

ANATOMY AND PHYSIOLOGY

Let us consider the anatomy and physiology of the pancreas only as far as it has a bearing on the pathologic changes which take place.

The common bile duct is completely surrounded by the head of the pancreas in three out of four cases. In the fourth case the head of the pancreas is deeply grooved to receive the common duct. The pancreatic ducts usually empty with the common duct into the duodenum at the ampulla of Vater. They may, however, empty separately or may empty into the common bile duct one-third inch above the duodenum. As surgeons we are interested primarily in the external secretion of the pancreas.

The lymphatic supply, which is interstitial in distribution, drains toward the head of the pancreas and the common bile duct, and anastomoses

with the lymphatics coming from the gall bladder. As shown by Graham and others, there is a close relationship between the lymphatics of the gall bladder, the liver, and the pancreas.

PATHOLOGY

Pancreatitis may be classified as acute or chronic with various in between stages.

Fitz, in his paper published in 1889, classified acute pancreatitis either as hemorrhagic, gangrenous, or suppurative. Acute pancreatitis is usually a necrotic process, often associated with hemorrhage when the necrotic process involves the blood vessels. The pancreas may be enlarged several times its normal size. It may be hard or edematous. It may be red or bluish black in spots or profuse, depending on the amount of hemorrhage present. The hemorrhagic type is often associated with fat necrosis and gall stones. The small yellowish white opaque areas of fat necrosis on the omentum and on the structures adjacent to the pancreas are quite unmistakable. In a large proportion of cases death occurs within the first four or five days. The gangrenous stage, characterized by discoloration and softening of necrotic tissue infiltrated with blood, represents a late stage of the same pathological process. Suppurative pancreatitis does not differ from similar lesions in other organs. Bacterial invasion may be caused by an extension from a suppurative inflammation of the bile ducts associated with gall stones, or it may follow a hemorrhagic necrosis of the pancreas. Fitz observed that fat necrosis is less frequently associated with suppurative inflammation than with hemorrhagic or gangrenous pancreatitis.

Chronic pancreatitis is chiefly characterized by an increase in the fibrous tissue of the pancreas. The surgeon is chiefly concerned with the interlobular type, which changes the character of the external secretion of the gland. At a late stage the contraction of the fibrous tissue causes the lobulations to become more distinct and to stand out as firm nodules. At a still later stage the entire gland feels like a hard nodular mass. This can be palpated at the time of operation. Not only may the fibrosis change the secretions of the pancreas, but due to the relation of the common bile duct, obstruction to the duct may result from the fibrosis and tumefaction of the head of the pancreas. Moynihan warns against making a diagnosis of chronic pancreatitis by palpating the gland alone, as variations in the normal are great. The possibility of the presence of carcinoma or syphilis must be excluded.

PATHOGENESIS

The cause of these pathologic changes in the pancreas is still a disputed question. The position of the gland, the rapid destructive changes, the masked symptoms, make accurate study most difficult.

Cases are on record where the infection has been traced to the appendix and to a duodenal ulcer. Evidence as to whether the infection or

* Read before the General Surgery Section of the California Medical Association at the Fifty-Eighth Annual Session, May 6-9, 1929.

causal agent reaches the pancreas through the lymphatics or by way of bile retrojected into the ducts of the pancreas, is far from being conclusive.

Moynihan believes that the immediate cause of the necrosis in acute pancreatitis is the activation of the pancreatic secretion by some agent within the substance of the gland. In chronic pancreatitis he believes that infection by way of the lymphatics is the causative agent.

Archibald believes that altered bile retrojected into the ducts of the pancreas may activate the trypsinogen into active trypsin, thus leading to self-digestion of the pancreas. Such necrosis he believes may stop short at a lower level of destruction, resulting only in inflammatory reaction, the first stage of chronic fibrosis. He believes bacteria play only a secondary rôle and that gall stones and spasm of the sphincter of Oddi are mechanical factors.

The supporters of the lymphatic theory are equally emphatic in their beliefs. The frequent observation of a localized hepatitis about the gall-bladder bed, associated with cholecystitis and pancreatitis has given rise to the opinion that there is a close relationship between the gall bladder, liver, and pancreas. This view has been confirmed by the work of Graham. It is claimed that enlarged inflammatory lymph nodes about the base of the cystic duct and common duct may lead to a reversing of the lymphatic current and an infectious or noninfectious lymphangitis of the pancreas may result. Supporters of this theory believe that the chronic stage of pancreatitis is thus produced which may at any time activate the acute stage.

TREATMENT

Recovery from acute pancreatitis, except in the most severe types, may take place without operation. However, these cases are so rare that no case should be left unoperated.

Operative mortality for acute pancreatitis has decreased in direct ratio to the early diagnosis and prompt surgical treatment. The disease is most often mistaken for high intestinal obstruction or perforation of a peptic ulcer or of the gall bladder. Any one of these conditions requires prompt surgical intervention. Valuable time should not be wasted in making a differential diagnosis. The escape of pancreatic secretion and the extravasation of blood into the general peritoneal cavity is rapid. The abdomen is best opened through a paramedian incision above the umbilicus. When the abdomen is opened the escape of bloody fluid and the presence of areas of pancreatic fat necrosis make the diagnosis positive. However, hemorrhage may be extensive or very limited. It may be confined to the region of the pancreas or limited to its capsule. The pancreas may contain a small hemorrhagic area or the entire gland may be converted into a large red soft mass consisting of blood, fat necrosis, and parts of necrotic gland tissue. The bulging

mass may crowd the stomach forward or appear through the gastrohepatic omentum, the gastrocolic omentum or the transverse mesocolon.

Upon opening the abdomen the bloody exudate should be aspirated as it is highly toxic. The general cavity should be well protected by gauze packs before proceeding to the exploration of the pancreas. The pancreas should be exposed by the most direct route, though the usual approach is through the gastrocolic omentum. The thin fibrous capsule of the pancreas may be slit with a curved forceps, care being taken not to plow into the gland, the purpose being to relieve the intraglandular tension. Vent must be given to any pent-up exudate, even if it is posterior to the pancreas. No effort should be made to loosen attached sloughs as hemorrhage may result. Abundant Penrose drains are then led down to contact with the pancreas. As infection of the biliary tract, with or without stones, so frequently co-exists with acute pancreatitis, a careful examination of the gall bladder and ducts should precede the operation on the pancreas. If the gall bladder shows evidence of infection or stones, it should be drained whenever possible. If stones are in the common duct they should be removed and the duct drained. Drainage of the bile tract aids the escape of bile and prevents any increase of pressure within the ducts. Operative procedures undertaken in acute pancreatitis are emergency procedures and the least possible should be done. If the effusion into the general cavity is great, a suprapubic drain into the pelvis should be placed.

The postoperative treatment does not differ from that of any other acute abdominal condition. If the effusion has been extensive, the patient should be placed on a peritonitis routine with administration of 3000 to 4000 cubic centimeters of fluids a day by hypodermoclysis and proctoclysis. The blood sugar should be watched. As in other conditions of lowered vitality the use of insulin and glucose may be indicated. The drain tubes should not be removed too early. Time must be given to have firm adhesions wall off the drainage tract and thus protect the general cavity against the digestive action of the secretions. The skin and abdominal wall may be protected by vaselined gauze, zinc oxid paste, or kaolin. The postoperative course is apt to be stormy.

Chronic pancreatitis is usually overlooked and is first recognized during the course of an operation on the biliary tract. In every case of chronic cholecystitis, chronic pancreatitis should be suspected. The first factor in treatment is removal of the cause of infection. This is necessary to prevent tissue changes from occurring in the pancreas which in time may cripple its function. Prompt and thorough removal of the primary focus of infection may arrest the disease before its more advanced form has developed. Drainage of the gall bladder, therefore, in chronic pancreatitis, is not a logical procedure. It does not do away with the infected gall bladder. Experience has shown that the patient is temporarily

benefited by gall bladder drainage, but recurrence of symptoms often occurs. Cholecystectomy, with drainage of the common duct, is recommended. In draining the common duct, Deaver and Judd use the T tube. The removing of the T tube may result in traumatism, which may lead to stricture of the common duct. Moynihan recommends the use of two catheters for drainage of the common duct. A large one, No. 10-14, is introduced into the hepatic duct, while a smaller one, No. 4-6, is inserted through the common duct into the duodenum. However, drainage of the gall bladder is justified in selected cases. In cases when the gall bladder does not seem diseased, and when there are no enlarged lymph nodes in the vicinity and the cause is elsewhere, as in a peptic ulcer, cholecystotomy has proved of great value. Doctor Lobingier has suggested leaving the stump of the gall bladder as a means of drainage. This removes the major part of the diseased gall bladder and avoids the hazard of any future stricture of the common duct. Drainage of the gall bladder or of the common duct, whichever is employed, must be continued over a long period of time.

A subacute stage of acute pancreatitis may result if the initial attack is less severe and if the resistance of the patient is sufficient to overcome the initial infection and shock. The whole attack is less severe. Where abscess and gangrene of the pancreas take place, early operation is indicated, as in the acute form. Usually, however, these are the cases seen late. The operative approach is the same as in acute pancreatitis. Drainage of the abscess must be made by the most direct route. Deaver has had occasion to drain these cases through the left lumbar route. When the lumbar drainage route is chosen, care must be used to avoid opening the peritoneum. It is best not to wipe out the abscess cavity with gauze as a severe hemorrhage may result. Abundant drainage is sufficient.

A pseudopancreatic cyst may be the result of acute hemorrhagic pancreatitis. It may be limited to the substance of the gland, or may be confined to the lesser peritoneal cavity. Prolonged drainage is indicated.

Following extensive destruction of the pancreas, diabetes mellitus may result. The only hope for such a patient is insulin. In diabetes, associated with gall-bladder disease, the source of infection should be removed. Marked improvement, and even cure, has been reported, especially in patients over forty years of age.

PANCREATITIS DEVELOPING AFTER OPERATIONS ON THE BILIARY TRACT

Some of the heretofore unexplained complications following operations on the biliary tract are now found due to acute pancreatitis. A so-called cardiac collapse occurring in the first twenty-four hours after operation may be due to pancreatitis. It may also occur later in the postoperative course. We should always bear this in mind in order to

give our patients the benefit of proper drainage in such an event.

PANCREATIC ASTHENIA

Pancreatic asthenia is a symptom complex which may develop after any operation on the biliary tract, and especially when the pancreas and common duct are involved. A. O. Whipple, in 1923, was first to give an excellent description of this disease. The patient becomes listless, apathetic, develops nausea and vomiting, has a loathing for all food, complains of extreme exhaustion and weariness, and becomes highly apprehensive. There is a marked drop in blood pressure and a rapid loss in weight. These patients do not become comatose or delirious. All effort is avoided. All treatments are dreaded and exhausting. This group of symptoms usually comes on after the shock of operation has passed off and the patient is apparently doing well. It usually occurs between the second and ninth day postoperative, and may last two to thirty days if the patient survives.

Treatment should be directed chiefly to restore the body fluid loss. The continual vomiting and refusal to take fluids leads to low urinary output and nitrogen retention. Blood transfusions are indicated. Infusions of glucose, 5 to 10 per cent, with insulin have given excellent results. Digitalis has been given by rectum to improve the vasomotor and intestinal tone. Recovery, when such takes place, is said to be very rapid.

REPORT OF CASES

The following reports will illustrate the different types of pancreatitis I have encountered.

CASE 1.—Dr. C., age fifty-eight, was taken with severe pain in epigastric region about 3 a. m. The pain was most acute. The vomitus did not contain blood. The pulse was elevated to 112. He perspired freely, his respiration was 24. Later the pain was extended somewhat to right side of abdomen. The muscles of the abdomen were on guard, especially in the epigastric region. His past digestive history made us suspicious of gastric or duodenal ulcer. The history, the onset, and physical findings pointed to an acute condition within the abdomen, probably a perforated ulcer. Exploration was done within six hours from onset. This revealed the stomach and duodenum normal. There were adhesions about a distended gall bladder, but no perforation. The pancreas was enlarged; bloody fluid and flocculent lymph was in the lesser sac. There was no free fluid in general cavity and no fat necrosis. The fibrous capsule of pancreas was slit with a curved Kocher forceps. Several Penrose drains were led to the pancreas through an opening in the gastrocolic omentum. The gall bladder was drained and several stones removed. No stones were felt in common duct. The patient made an uneventful recovery though the convalescence was somewhat stormy. There is no doubt but that early operation stopped the acute pancreatitis in an early stage.

CASE 2.—Mrs. W., age sixty-one, presented a cystic mass above umbilicus. Patient had had digestive disturbances, pain, nausea and vomiting for about four weeks. There was a history of attacks of gall-stone colic dating back three years. Exploration revealed the pancreas enlarged two to four times normal size. An abscess pointed between stomach, duodenum, and transverse colon. The lesser sac was obliterated by

adhesions. The gall bladder contained many stones. There were many adhesions about the above area. The abscess was drained. The stones were removed from the gall bladder and cholecystotomy done. The patient had a very stormy postoperative convalescence with severe abdominal pains and digestion of wound due to pancreatic secretions. Her ultimate recovery was satisfactory except for a postoperative ventral hernia.

✓ ✓ ✓

CASE 3.—Mrs. R., age fifty-three, a Mexican woman, was operated upon for acute cholecystitis and stone in common duct, with jaundice. Operation revealed a distended gall bladder, with thickened walls and filled with stones and pus. A marked perihepatitis about the gall bladder was present, with the liver edges rounded by swelling. The pancreas was enlarged, the lobules being prominent. The gall bladder was drained and the stones removed. The common-duct stone was removed and a No. 14 catheter anchored in the common duct, the tip placed in the direction of the hepatic duct. The postoperative course was satisfactory until the second week, when she developed the typical syndrome of pancreatic asthenia. She improved whenever the body fluids were restored, but would relapse as soon as they were stopped. This condition lasted for more than three weeks, when she died. No autopsy was permitted.

SUMMARY

In all operations in the upper abdomen the pancreas should be examined.

Operation for acute pancreatitis is done to help a patient over a serious emergency. No curative measures should be undertaken. The gall bladder should be drained. Not much time should be spent in removing stones.

In chronic pancreatitis cases the object should be to remove the focus of infection.

Postoperative complication of acute pancreatitis should be borne in mind in all operations on the biliary tract.

Pancreatic asthenia requires supportive treatment, restoration of body fluids, and the use of glucose and insulin.

701 Professional Building.

DISCUSSION

C. G. TOLAND, M. D. (1930 Wilshire Boulevard, Los Angeles).—Doctor Breyer has discussed the subject of acute pancreatitis from the standpoint of incidence, anatomy, physiology, pathogenesis, and treatment. I shall discuss the cause and the symptoms of acute pancreatitis.

The most serious of the acute abdominal diseases with which we, as physicians, have to deal is acute pancreatitis. The symptoms are acute, the diagnosis at times obscure, the treatment is radical, and the results are not entirely satisfactory. No one has been able definitely to prove the exact cause of acute pancreatitis and as a result there has appeared a large mass of experimental work and speculation on the subject. A number of men have produced acute hemorrhagic pancreatitis by injecting various substances, such as bile or duodenal contents into the pancreatic ducts, while others have worked out a lymphatic connection between the pancreas and appendix and gall bladder. They have shown that infection could extend from an acute process superimposed upon a chronic inflammation in either of these organs, through the retroperitoneal spaces to the pancreas.

Acute pancreatitis can be divided into three types: acute interstitial pancreatitis, acute suppurative pan-

creatitis or the pancreatic abscess, and the hemorrhagic type or pancreatic necrosis.

Acute pancreatic necrosis is generally considered to be a distinct disease and is rarely infectious in origin. The common cause is a retrojection of abnormal bile, that is, bile rich in salts, into the duct of Wirsung or to a retrojection of duodenal contents into the duct of Santorini. Either of these agents in the pancreatic ducts activates the proteolytic ferment, trypsin, resulting in digestion and necrosis of the parenchymatous cells, erosion of blood vessels, and hemorrhage.

Symptoms of Acute Pancreatitis.—Characterized by sudden severe pain in epigastrium radiating to the back, the left flank, to the lower chest, the left shoulder and over the entire abdomen, accompanied by abdominal distention, vomiting, and physical collapse. The extremities are blue, cold and clammy, and the patient is very restless.

Within twenty-four to forty-eight hours, if patient is alive, marked diarrhea begins. Tenderness is usually localized in the upper abdomen with marked resistance. At times a sausage-shaped mass may be felt in this same region. The temperature ranges from subnormal to 101, 102, or 103, and the white blood count is increased.

We must always keep in mind any previous history of gall stones, infected gall bladder, duodenal or gastric ulcer, appendicitis, or injury. The pain of an acute pancreatitis is not relieved by morphin so readily as in gall-stone colic. We must further differentiate incarcerated epigastric hernia; acute gastric dilatation; mineral poisoning; angina pectoris; spasm of the mesenteric arteries; mesenteric thrombosis; aneurysm of the abdominal aorta with slow leakage; intestinal obstruction; perirenal abscess of the left side; hematogenous infection of the left kidney; perforation of the undescended retrocolic appendix; ruptured ectopic pregnancy; and Pott's disease.

We will not discuss the matter of treatment except to emphasize Doctor Breyer's opinion that in acute pancreatitis immediate operation is necessary to save life.

✱

CLARENCE E. REES, M. D. (2001 Fourth Street, San Diego).—Acute pancreatitis when encountered by the surgeon usually presents the symptoms of a violent peritonitis. The patient is too ill to give a satisfactory history and the abdomen too rigid and tender for examination and localization of the primary focus. These patients are operated upon for acute surgical abdomen with a usual diagnosis of ruptured viscus; the pancreatic origin usually constitutes a surgical surprise. The hemorrhagic peritonitis, with the milk-white areas of fatty necrosis, should lead one directly to the diseased pancreas the treatment of which has been well outlined. Any prolonged procedure on bile tracts other than cholecystostomy should be avoided as these patients are poor risks. Sufficient drainage of the abdomen and postoperative support have been stressed.

In other abdominal operations the pancreas should be handled with the utmost care, as a postoperative acute pancreatitis is a fatal complication. Such a complication is particularly likely to occur in operations on the common bile duct, where a stone is encysted at the ampulla of Vater. Attempts to elevate the stone from the ampulla by stripping and manipulating the duct in the region of the pancreas, if made at all, should be made with the utmost care as this is probably the most frequent cause of surgical pancreatitis. Also in transduodenal removal of calculi from the common duct the ampulla should be definitely isolated and enlarged only enough to permit removal of the stone. Incision of the common duct through the duodenum in the region of the stone rather than through the ampulla is a much easier procedure but is attended by a much higher mortality because it permits a retroperitoneal leak of pancreatic secretion.

When the abdominal drainage is irritating and contains pancreatic ferments the skin in the region of

the wound can be well protected with a dried milk dressing.* Dried milk is sprinkled thickly on the skin around the drainage tubes, a layer of gauze placed over this and milk again sprinkled over the gauze; the usual dressings are then applied. Dried milk, with its high concentration of fat, protein, and carbohydrate, has the advantage of neutralizing all of the ferments of the pancreas and thus aids in protecting the skin.



CHARLES A. DUKES, M. D. (426 Seventeenth Street, Oakland).—Pancreatitis is a disease which has been frequently overlooked not only by the surgeon but by the diagnostician, especially the type of cases which have been reviewed under the head of subacute pancreatitis and those which follow operation on the biliary tract.

In the treatment of an acute condition of the abdomen where the diagnosis or operation seems somewhat hazy, where the appendix is not sufficient to account for the acute condition and the gall bladder is not sufficiently involved to lead one to suspect this as a cause of the condition, the surgeon certainly is negligent who does not expose the pancreas and definitely determine its condition.

It has seemed to me at times that, in the severe conditions which accompany acute pancreatitis, we are prone to use a type of anesthetic that does not give complete relaxation and the best opportunity for exploration of the abdomen. In these acute conditions there is a natural tendency to hurry the investigation.

I am very much impressed with the necessity for thorough drainage in these cases. I think this has been excellently shown in a paper by Olds, read before this section last year. There is no doubt in my mind that proper drainage of these cases will further reduce the mortality rate.



DOCTOR BREYER (Closing).—Because of lack of time it was not possible for me to take up the symptomatology of pancreatitis. I am very glad that the discussers have emphasized the difficulty of making an accurate diagnosis. We shall be glad to try on our next case the dried milk as a dressing for intestinal fistula suggested by Dr. Clarence E. Rees.

POSTOPERATIVE MASSIVE ATELECTASIS†

A DISCUSSION OF ITS ETIOLOGY, PREVENTION AND TREATMENT, WITH REPORT OF CASES

By MARY E. MATHES, M. D.

AND

EMILE HOLMAN, M. D.

San Francisco

DISCUSSION by Frederick Leet Reichert, M. D., San Francisco.

ALTHOUGH the clinical aspects of postoperative massive collapse have become thoroughly familiar to surgeons through the recent reports of Scrimger,¹ Scott,^{2 3 4} Churchill,⁵ Jackson,⁶ Lee,⁷ Sante,⁸ et al., the etiology of this most interesting phenomenon remains sufficiently obscure to warrant the detailed presentation of individual experiences which provide important and possibly illuminating evidence as to the mechanism of its production.

PATHOLOGY

In his original definition of postoperative atelectasis William Pasteur emphasized "the

* Rees, Clarence E.: Dried Milk as a Dressing for Intestinal Fistula, *California and West. Medicine*, 30:419, 1929.

† Read before the Anesthesiology Section of the California Medical Association at the Fifty-Eighth Annual Session, May 6-9, 1929.



Fig. 1.—Massive atelectasis of the left lung with displacement of the mediastinum and heart to the left fourteen hours after appendectomy. Case 2.

failure of inspiratory power" as being responsible for the sudden deflation of large areas of lung tissue, a deflation which he thought occurred in the absence of any signs of obstruction of the airways. The failure in inspiratory power he attributed to the loss of the mobility of the diaphragm, either by direct paralysis or by reflex inhibition from acute inflammation. Briscoe attributes the deflation of the lung partly to the normal consequence of diminished breathing incident to a prolonged supine posture, incident to a severe illness, and partly to the alterations in the action of the diaphragm and of the muscles accessory to the diaphragm produced by inflammation of the muscles or of the pleural membrane covering them.

Most modern authors consider that bronchial obstruction associated with a weakened or diminished respiratory force plays the important part in the development of atelectasis. The site of this bronchial obstruction was thought by Elliott and Dingley⁹ and later by Scott,² to be located in the bronchioles and peripheral respiratory passages, whereas Lee and Jackson⁶ consider plugs of thick, tenacious mucus in the larger bronchi, observable and removable by bronchoscope, to be responsible for the obstruction.

To explain the hypothetical obstruction in the bronchioles, Scott suggests that the fundamental condition which initiates massive atelectasis is a nervous reflex, probably vasomotor, which causes a bilateral, partial obstruction in the peripheral respiratory passages, and that posture and tenacious sputum are secondary factors which make this obstruction complete on one side in advance of the other with a subsequent unilateral absorption of air to complete the picture of

massive collapse. In this he is sustained by Sante⁸ who suggests that some injury or insult in the region of the vagus distribution produces a reflex constricting action on the bronchioles, permitting their temporary collapse, with an accompanying absorption of the alveolar air beyond the collapsed bronchioles.

In recent reports there has been a gradual accumulation of concrete evidence in favor of the belief that central bronchial obstruction plays the important part in the production of massive atelectasis.

1. There is a striking similarity between this condition and the collapse accompanying the occlusion of primary bronchi by intrabronchial neoplasms.

2. The experiences of Lee and his associates demonstrate the feasibility of prompt refilling of an atelectatic lung by the bronchoscopic removal of mucous plugs from the large bronchi.

3. The condition can be accurately duplicated experimentally by the introduction of a plug of thick sputum into the main bronchus of a dog in whom the cough reflex has been abolished by sodium barbiturate administered intraperitoneally (Lee⁷). Air in the alveoli was gradually absorbed beyond the obstruction and massive collapse ensued. Similarly partial collapse of one lung has been produced in our laboratory by bronchial plugs of sea sponges.

Additional evidence that the plugging of the larger bronchi by thick sputum is responsible for the development of acute atelectasis was furnished by the two following clinical cases. One of them we believe to be unique in its manifestations.

REPORT OF CASES

CASE 1.—A man of forty-five with poor, carious teeth, badly infected gums and a purulent pharyngeal discharge was operated on for carcinoma of the pylorus, and a Polya resection performed under gas



Fig. 2.—Roentgenogram demonstrating immediate improvement after turning patient on right side followed by prompt expectoration of a thick mass of sputum. Case 2.



Fig. 3.—Roentgenogram demonstrating a fairly normal appearance of lung immediately following the expectoration of a mass of sputum which had produced a recurring atelectasis. Picture taken twenty-four hours after Fig. 2.

and ether anesthesia. Fourteen hours after his return to the ward the nurse noted on the bedside chart "The patient seems to have considerable mucus in throat and is unable to cough it up."

Twelve hours after this note was made it was observed that the pulse rate was 132, respirations 32, temperature 102 degrees Fahrenheit. Examination revealed marked diminution of respiratory movements on the right with retraction of the chest wall and complete displacement of the heart to the right side. An immediate x-ray examination (Fig. 1) showed the typical appearance of a massive collapse. The next morning we returned to find a greatly changed patient with a temperature of 100 degrees Fahrenheit, pulse 102, and respirations 24, and with complete disappearance of the respiratory distress and physical signs previously observed. An immediate roentgenogram showed practically complete disappearance of the atelectasis. The patient informed us that during the night he had spat up about a half cupful of thick yellowish sputum and that this was followed by prompt relief of all subjective distress and dyspnea. An uneventful recovery followed.

✓ ✓ ✓

CASE 2.—A young sophomore at college, eighteen years old, was operated upon for acute gangrenous appendicitis and localized abscess, following symptoms of three days' duration. The appendix was removed through a McBurney incision under gas anesthesia and the wound drained. Accompanying the abdominal symptoms there had developed a cough with some purulent sputum. The lungs were clear.

Fourteen hours after the operation the patient was quite ill, coughing and raising small amounts of thick, yellowish sputum. The abdomen was markedly improved as compared to its condition the day before. The chest, however, showed a striking picture: The left side was retracted and moved almost not at all on respiration. The heart was displaced markedly to the left, the right border being demonstrable to the left of the sternum. In its upper half, the left chest was flat to percussion, and no breath sounds were audible, only a few moist râles. An immediate roentgenogram revealed a typical massive collapse. (Fig. 1.) Under the fluoroscope the patient was then rolled over on his good side (Sante⁸) and an immediate improvement in the aëration of the left lung was observed under the fluoroscope with a marked change

in the physical signs. (Fig. 2.) The patient, who was an intelligent college student, volunteered the information that with the change in position he noted subjectively a *feeling as though a whistling had occurred in his left chest, and that this whistling seemed to start in the region of the sternum and to travel toward the left clavicle.* A few minutes after the improvement was noted the patient coughed up a half ounce of thick purulent material.

Twenty-four hours later the patient was again observed and again the typical appearance of a massive collapse was present with physical signs identical with those present before the expectoration of mucus on the previous morning. On this occasion loud rhonchi could be heard over the entire left chest. In order to examine the patient posteriorly more carefully he was asked to roll slightly to the right side. To our astonishment and chagrin, the patient began to cough and to spit up a large amount of greenish yellow mucus, some of it quite firm, being almost a cast of the bronchus. Again, as before, the patient noted the whistling within his chest proceeding from the sternum to the clavicle. There was an immediate change in the physical signs and appearance of the patient, and there remained no physical nor radiologic evidence of the massive collapse. (Fig. 3.)

Improvement continued satisfactorily until three days later, when the patient again presented the physical signs of a massive collapse with rapid and difficult breathing. It was accompanied by bubbling respirations, and loud noises were heard throughout his left chest. A fluoroscopic examination was requested, but in transferring the patient to the fluoroscopic table he was rolled onto the unaffected or right side with prompt relief from his difficult and rapid breathing. For the third time the whistling sensation running from the sternum to the clavicle was experienced by the patient followed by the expectoration of considerable sputum. There can be little doubt as to the interpretation of this phenomenon. With the displacement of a large plug of mucus from the main bronchi, the collapsed channels and alveoli of the atelectatic lung were suddenly filled with a rush of air through the bronchi, and one cannot escape the conclusion that the bronchial obstruction of a massive collapse lies not in the peripheral respiratory passages but in the central or hilar bronchi. The observation indicates also that there is considerable negative pressure within the collapsed lung which acts as a constant suction in holding the thick bronchial secretion in place once the collapse has occurred, increasing the difficulty of the removal of this secretion by the ordinary act of coughing.

SEQUENCE OF EVENTS IN ACUTE ATELECTASIS

Our conception of the sequence of events leading to the completed picture of acute atelectasis is as follows:

1. Accumulation of a mucopurulent tenacious exudate in the hilar bronchi of one side. The amount and character of this bronchial exudate is undoubtedly influenced by the presence or absence of a respiratory infection before operation and by the reaction of the bronchial mucosa to the type of anesthesia administered. The factors determining the side upon which such accumulation occurs are: (a) Posture on the operating table, Scott³ and Jackson⁶ have suggested that the dependent side is the one on which the collapse develops. (b) Compression of part of the thorax by lying on one side or by resting on a sandbag or elevations such as are employed in operations on the kidney. Such compressions result in incomplete aëration of the compressed lobe or lung

on one side, permitting the accumulation of mucus in the bronchi. (c) A prolonged recumbency in one position after operation, any movement being resisted by the patient because of pain.

The prompt appearance of acute collapse within the first twenty-four hours after operation in more than half of the reported cases suggests that this mucus began to collect during the period of anesthesia and that its accumulation in the larger bronchi was determined and assisted both by posture and by the incomplete aëration of part of the lung and by the absence of coughing during the anesthesia.

2. After operation the voluntary arrest of movement of all the respiratory muscles because of the pain associated with deeper respirations favors the further accumulation of mucus in the bronchi, the site of this accumulation being determined again by posture and by the previous compression of the chest.

3. Through fear of pain the patient is unwilling to contract the traumatized abdominal muscles and to make the forced expiratory effort in the act of coughing necessary to dislodge the accumulating mucus. This, of course, is more pronounced in the sensitive and nervous patient whom Scott thought particularly susceptible to his vasomotor reflex responsible for the initiation of the collapse, but anyone who has experienced an abdominal operation will realize the reality of the pain accompanying breathing and coughing in the first few days following a laparotomy.

4. The complete blocking of the main bronchus or bronchi to one lobe or to lobes causes the absorption of air in the lung beyond the obstruction with shrinking of the affected lung and distention of the other lung. Displacement of the mediastinum and heart is the result of these last two factors. The completeness or incompleteness of the blocking of the bronchus explains the diverse physical signs encountered, particularly with reference to the loud râles and rhonchi occasionally heard. An incompletely plugged primary bronchus accompanied by complete blocking of the main bronchus to one of the lobes only will permit air to bubble back and forth into the expanding lobe, whereas almost complete silence will be present over the area of the lobe to which the completely plugged bronchus leads. In many instances the signs accompanying the atelectasis are much more pronounced over one or the other lobe of the affected side and, as pointed out by Lee⁷ and Churchill,⁵ the phenomenon of atelectasis may affect the lung in varying degrees, involving in different cases parts of a lobe, one lobe or the whole lung on one side. The partial involvement of a lobe is no doubt frequently overlooked due to the meagerness of the physical signs accompanying the atelectasis.

Although there is a tendency to minimize the serious effects of this postoperative complication, recent work¹⁰ suggests strongly that the more serious complication of pneumonia may have its

origin in areas of atelectasis. Our every effort should, therefore, be directed toward its prevention.

MEASURES TO PREVENT ATELECTASIS

Bearing in mind the probable sequence of events leading to its occurrence, let us consider the measures, in the order of their application, which may aid in avoiding the development of atelectasis.

1. The formation of thick, tenacious mucus, which is so frequently observed as the probable cause of a massive collapse, may be favored by a too large dose of atropin before operation. When a patient gives preoperative evidence of a purulent bronchitis it may be better to avoid giving any atropin at all. A more abundant but thin bronchial secretion is preferable to a thick, tenacious secretion.

2. Large preoperative doses of morphia should be avoided lest the morphia aid in producing shallow breathing and complete abolition of the coughing reflex for a prolonged period after anesthesia has ceased. When preoperative evidence exists as to the presence of a bronchial secretion, due to a chronic respiratory infection, it would be preferable to administer none or only small preanesthetic doses of morphia. It is evident that the anesthetist should be familiar with the exact condition of the patient before giving the preanesthetic order of atropin and morphia. Similarly too frequent and too large doses of morphia should be avoided after operation for the same reasons. It is our practice to use rectal instillations of large doses, forty to eighty grains, of sodium bromid, in tap water, supplemented by small doses of morphia to control postoperative pain.

3. All areas in the lung which may have remained "silent" or subject to minimum aëration during the operation, due to posture and compression, should be well expanded through hyperventilation induced by carbon dioxid saturation, by rebreathing or by breathing a mixture of carbon dioxid and oxygen at the end of the operation, as advocated by Scott and Cutler.⁴ Incipient plugging of a bronchus may well be cleared by this procedure. Scott advocates "the use of gas from a tank of 30 per cent carbon dioxid and 70 per cent oxygen which is delivered undiluted to the mask, the anesthetist varying the amount of carbon dioxid given by allowing the admixture of air around the mask, and by the interval the latter is held in position. The whole purpose of the procedure is to hyperventilate fairly vigorously but not sufficiently to tire the patient or to raise the blood pressure excessively. After the patient begins to breathe deeply and at a slightly increased rate, the mask is removed or lifted and the hyperventilation diminishes. Usually several such waves of increased depth of respiration are produced in this manner over a period of from five to ten minutes. For a moderately long ether anesthesia this does not suffice to deëtherize the

patient completely to the point of consciousness, though it usually improves the color and the pulse volume. The purpose of this routine hyperventilation is not primarily that of deëtherization, but the prophylaxis of massive atelectasis. The precaution is always taken that hyperventilation is not carried to the extent of tiring the patient. Infants, persons with pulmonary disease, and cachectic patients are the only ones not given hyperventilation."

4. Upon the return of the patient to his room the following regimen is undertaken:

(a) Semi-Fowler's position is usually practiced, particularly when the patient is lying on his back.

(b) The position of the patient is changed at hourly intervals by rolling slightly to either side, maintaining the position by pillows under the back.

(c) The patient is instructed to cough up any mucus which may be heard collecting in the bronchi, and is assisted in this act of coughing by pressure over the abdominal dressing, giving added support to the abdominal muscles.

(d) The patient is encouraged to breathe deeply at intervals, regular breathing exercises being instituted by the nurse and by the doctor when the patient is conscious.

(e) After the first twenty-four hours the patient is rolled completely over on either side several times daily in order to assist in dislodging collecting mucus as suggested by Sante.

These measures may be utilized to prevent the appearance of acute atelectasis and undoubtedly serve also in the prevention of so-called hypostatic pneumonia, which may have its origin in atelectatic areas. Once the condition of atelectasis has arisen, the patient is treated by rolling him to the good side, as advocated by Sante. When thick, tenacious sputum is present, potassium iodid or ammonium chlorid may be administered to thin and loosen it.

Bronchoscopy, as advocated by Lee and Jackson, has not been utilized by us in the few instances seen. It is a serious procedure in a patient just recovering from the effects of a major operation twenty-four hours previously, and the efficacy of the method of Sante was so well demonstrated in the second case reported by us that it is the first procedure to be undertaken. In experienced hands bronchoscopy may be employed if Sante's procedure fails to dislodge the obstruction, but it cannot be recommended as a general therapeutic procedure.

SUMMARY

Evidence that acute atelectasis is due to a central bronchial obstruction is furnished by the experience with an example of this postoperative complication on the left side in which a subjective feeling of "whistling" occurred, proceeding from under the sternum and traveling toward the left clavicle, coincident with the coughing up of a

large amount of thick sputum and followed by the complete disappearance of all signs and symptoms.

Stanford University School of Medicine.

REFERENCES

1. Scrimger, F. A. C.: Postoperative Massive Collapse of the Lung. *Surg., Gyn. and Obs.* 32:486, June, 1921.
2. Scott, W. J. M.: Postoperative Massive Collapse of the Lung. *Arch. Surg.* 10:75, Jan. 1925.
3. Scott, W. J. M., and Joelson, James J.: Postoperative Massive Atelectasis. *Arch. Surg.* 15:855, Dec. 1927.
4. Scott, W. J. M., and Cutler, Elliott C.: Postoperative Massive Atelectasis. *Jr. A. M. A.* 90:1759, June 1928.
5. Churchill, Edward D.: Pulmonary Atelectasis, With Especial Reference to Massive Collapse of the Lung. *Arch. Surg.* 11:489, Oct. 1925.
6. Jackson, Chevalier, and Lee, Walter Estell: Acute Massive Collapse of the Lungs. *Ann. Surg.* 82:364, Sept. 1925.
7. Lee, Walter Estelle; Ravdin, I. S.; Tucker, Gabriel, and Pendergrass, E. P.: Studies on Experimental Pulmonary Atelectasis. *Trans. Amer. Surg. Assn.* 46:314, 1928.
8. Sante, L. R.: Massive (Atelectatic) Collapse of the Lung, With Especial Reference to Treatment. *Jr. A. M. A.* 88:1539, May 14, 1927.
9. Elliott, T. R., and Dingley, L. A.: Massive Collapse of the Lungs Following Abdominal Operations. *Lancet* 1:1305, 1914.
10. Coryllos, Pol N., and Birnbaum, George L.: Lobar Pneumonia: Considered as Pneumococcic Lobar Atelectasis of the Lung. *Bronchoscopic Investigation.* *Arch. Surg.* 18:190, Jan. 1929, Part II.

DISCUSSION

FREDERICK LEET REICHERT, M. D. (Stanford Hospital, San Francisco).—The two excellent case illustrations in Doctor Mathes' and Doctor Holman's paper offer a beautiful demonstration of the importance of careful and scientific observation in determining the etiology of postoperative massive collapse. Such detailed record of cases facilitates accurate deductions and leads to clarification of the subject.

During the past four years with the further knowledge of the etiology of pulmonary atelectasis, the anesthetist has nearly forgotten his great fear, that of "anesthetic pneumonia." Through his efforts during and at the end of the operation as well as by the improved postoperative care of the patient, this distressing complication is disappearing. Formerly this so-called anesthetic pneumonia was in many cases either massive atelectasis or its offspring, hypostatic pneumonia.

The anesthetist plays an important rôle in its prevention as the authors have indicated. He should warn the operator of its possible development in the individual case from his observations of the duration of the anesthesia, or the presence of mucus, or the position of the patient on the operating table. Often after light anesthesia and before the operative pains are felt by the patient, the anesthetist can prevail upon the patient to expectorate and to cough up a potential mucous plug.

This condition may develop following operative procedures elsewhere than in the abdomen, as the following case will illustrate. After two left craniotomies on a child of seven years under ether anesthesia for the two-stage removal of a brain tumor, a right-sided pulmonary atelectasis developed, and each time, by turning the child onto the left side, tenacious bronchial plugs were coughed out. The long operation

with the patient lying on the right side, plus considerable mucus from ether irritation and the prolonged right-sided position in bed to prevent pressure on the operative wound, were all inductive to the development of this complication. The expediency of just rolling the child onto the good side removed the plug with prompt improvement of pulse, respiration and temperature.

CERTAIN OPERATIVE PROCEDURES EMPLOYED IN OPHTHALMOLOGY*

REPORT OF CASES

By JOSEPH L. MCCOOL, M. D.
San Francisco

WHEN the invitation to present a paper before this section was extended to me my first impulse was to acknowledge my appreciation of the honor and then decline. After discussing the matter it seemed permissible to depart somewhat from the stereotyped procedure of presenting a formal paper on some one particular subject, and instead to give my own personal experiences in dealing with the different surgical conditions which one meets in the daily practice of ophthalmology.

CATARACT OPERATIONS

Because of its importance and the position which it occupies in the list of diseases amenable to operation, cataract operation will be discussed first. Let me say at once that I do not practice the intracapsular operation except in certain selected cases, and then only in such manner as to safeguard the integrity of the eye to the utmost.

Inasmuch as all of us are interested in knowing how other surgeons operate, and how best to improve our own technique, it seemed to me that by describing my own methods of operating I might be able to help someone and that the general informal discussion which I hope will follow will bring out much that will be mutually beneficial. We are, or should be, eclectic in developing our technique.

Preparation.—In preparing the patient for operation I try to break into the routine of his life as little as possible; at the same time I speak of the operation as though it were of no particular moment. Of course the family have been told that it is a procedure requiring more than ordinary skill, judgment, and experience, and even under the very best of conditions may be unsuccessful. I always operate in the late afternoon unless there are specific reasons to do otherwise. There are several good reasons why this has proven satisfactory for me and my patients. The first six hours after the operation are the most important, and the patient during this time should be kept as quiet and free from annoyance as possible. Not infrequently the patient falls asleep after being placed in bed and does not awake for six or seven hours. Then, too, the necessary noises and disturbances incident upon hospital activity are beginning to abate by 4 o'clock in the

* Read before the Ophthalmological Section of the Utah State Medical Association, June 30, 1928.

afternoon. Furthermore, I am disinclined to operate in the morning because most of the operations on the ear, nose, and throat are performed at that time, and the commotion and smell of ether is distinctly bad for the morale of a cataract patient. From a purely selfish standpoint it suits my own convenience better to operate in the afternoon, as I use the morning hours from 8:30 o'clock on for my office practice.

The patient is sent to the hospital the morning of the operation. After a preliminary washing with tincture of green soap, the eyebrows and eyelashes of the eye to be operated upon are shaved and clipped. The skin in the immediate vicinity is painted with a solution of hexylresorcinol 1 to 3000, and a sterile pad placed over the eye. Two hours before the time set for the operation the patient is given two allonal tablets, and one drop of 2 per cent homatropin is instilled into the eye. These are repeated one hour before the operation. After the patient is on the table, and while the eye is being cocainized, hexylresorcinol 1 to 3000 is again applied to the skin around the eye. The conjunctival sac is flushed with the same solution.

The fibers of the seventh nerve supplying the orbicularis are then blocked by infiltration anesthesia, using 6 cc. of 2 per cent novocain and adrenalin (Metz). I use a 40 mm. platino-iridium needle, which is sterilized in an alcohol flame. This procedure is routine for every operation in which the eyeball is opened. Within five minutes the orbicularis fibers begin to smooth out and the patient experiences difficulty in closing the lids. By the time I am ready to make my incision forcible closing of the lids is impossible. As a matter of fact, while the nurse is arranging the instruments, frequently I find it necessary to close the upper lid and place a pledget of moist cotton over it to prevent desiccation of the cornea. I have often wondered why this very important and simple procedure is not universally used. That it is not, I know from conversation with other ophthalmic surgeons. I cannot too strongly urge upon all who do not practice it to do so. It is a very simple procedure, practically painless, and gives a sense of security that is of incalculable value.

While it is not my routine practice, in those eyes that are at all congested and in which I have reason to feel that cocain will not suffice to effect a good anesthesia, and also in extremely nervous individuals, I use a deep orbital injection of 2 cc. of 2 per cent novocain. In giving this, the 40 mm. needle is used, previously sterilized in the flame and inserted through the skin of the lower lid, just above the bony rim of the orbit 1 cm. down and in from the external canthal ligament. The needle follows the external orbital wall for about 30 mm., then turned medially between the external and inferior recti muscles, the plunger is withdrawn slightly so as to be sure the point has not entered a vein, and the contents are slowly injected. The infiltration anesthesia thus effected

catches the short ciliary nerves from the ciliary ganglion and the long naso-ciliary nerves.

I do not use a subconjunctival injection above the cornea as many men do, as it seems to me that what is gained in anesthetizing the iris for the iridectomy is lost in making an accurate conjunctival flap. I am willing to admit, however, that this objection may be rather more fancied than real.

The separation of the lids may be effected either with lid hooks or with a speculum. The Fisher lid hooks and those devised by Green are undoubtedly effective in giving good lid control. I must admit, however, that, with good akinesis, I am very partial to a small light speculum devised by Wilder. This speculum has a small, flat handle beneath the blades which permits of its being used to raise the lids if the occasion arises. This has an added advantage of giving the assistant a free hand to manipulate the flap and to hold extra instruments.

Corneal Section.—The incision for corneal section is an ample one embracing slightly less than one-half the cornea, and the conjunctival flap is made upon completing this. A single stitch of No. 1 twisted silk is placed in the flap and the loop is spread and laid aside until the lens is extracted.

Iridectomy.—In making the iridectomy the assistant grasps a portion of the loop and the free end of the suture lying over the cornea and gently raises the flap. The iris forceps that I use is not an iris forceps at all, but the small instrument which Elliot uses in grasping the button made by the trephine. I like this instrument because it is short and has the tooth on the under side, which, when the flap is raised, may be placed directly on the iris near the sphincter if a full iridectomy is to be made, and near the periphery if one elects to do a buttonhole iridectomy. If a complete iridectomy is made the blades of the iris scissors are placed so as to coincide with the vertical meridian of the cornea. This gives a smaller coloboma. In making a peripheral iridectomy the cut is easier to make, if the blades of the scissors lie parallel to the incision.

Some surgeons invariably use a complete iridectomy while others prefer a peripheral one. My own practice is to do a complete iridectomy on old people where the cosmetic result is of no particular moment. There is no doubt that the extraction is much easier to perform through a complete iridectomy than through either the intact iris or a peripheral iridectomy; and if reasonable care is exercised in replacing the pillars of the coloboma the cosmetic result is good, as the upper lid covers it to such an extent so as to make it almost invisible. On the other hand, in young individuals—those between forty and sixty—the cosmetic result is not to be considered lightly. In these cases I have been doing a preliminary peripheral iridectomy. This can be done in the office, and is no more difficult to do than a simple paracentesis. The pupil is contracted with several drops of eserine, one grain to the ounce. A small keratome incision about three or four millimeters long is made at the limbus; a very fine iris for-

ceps is inserted and a small piece of iris near the periphery is excised. The eye is bandaged and the patient rests in the office for several hours, and is then permitted to go home. Several days later the extraction is performed. Inasmuch as the pupil is fully dilated at the time of the major operation, this is greatly facilitated by having the iridectomy out of the way. I have done this on a number of patients, and so far have had no reason to regret it.

Delivery of the Lens.—There are numerous methods of extracting the lens, both intra- and extracapsular. You are, of course, familiar with all of them. I have tried many of them and have finally adopted the following technique as being, in my hands at least, the safest and most efficient. Two types of capsule forceps are used, depending upon the prominence of the eye. If the eye is small, shrunken, or the brow prominent, the new model Ewing forceps is selected. If the eye is large and fairly prominent, giving plenty of room for manipulation, the new Vail forceps are used. The assistant gently raises the conjunctivo-corneal flap and the forceps are inserted close to the lower border of the iris; when they reach this point the tips are depressed and passed behind the lower portion of the iris and at this point opened. A fairly large bite of capsule is taken in the grasp of the forceps and held while a large expression hook makes pressure below the lower limbus. If the capsule is more resistant than the zonule the lens will be delivered in its capsule. No more pressure need be applied than in the extracapsular operation. If, however, the capsular is less resistant than the zonule the former comes away, converting the operation into an extracapsular one with the difference that by taking a grasp of the capsule low down behind the lower margin of the iris a larger bite of capsule comes away with the forceps than with any other method with which I am familiar.

In the January issue of the *Archives of Ophthalmology* Colonel Henry Smith presented a paper concerning a new method of extraction in the capsule by which he tumbled all lenses, incipient, intumescent, mature and sclerosed, by making pressure five to six millimeters below the limbus, thereby forcing the vitreous forward between the ciliary body and the lower edge of the lens. Since reading that article I have, without changing the fixation of the lens with forceps, dropped the expression hook from the limbus to a point five or six millimeters below this and made pressure there. A very useful instrument for making this pressure is the one recently devised by Swartz of St. Louis, which I commend to you. If the lens tumbles, the cornea is tucked in behind the advancing lens and the upper zonule fibers are gently broken by raking the lens sideways with the concave edge of the hook after the lens lies outside of the eye. The stitch is then tied, the iris is replaced and the eye is closed. If the capsule ruptures after the stitch is tied lightly, the cortex is washed out with one-half normal salt

solution. It is evident, of course, that there is nothing original in this technique. I have taken what is best from that suggested by operators of vaster experience than mine. However, there is this to be said about it: at no time is more pressure used than is justifiable, and in more than half of my cases the lens is extracted in its capsule. In those in which the capsule ruptures, a large enough piece comes away so as to make a needling rarely necessary.

Concerning its applicability in complicated cataracts I should like to point out a few points in the technique which have proven useful in a few cases. It is, of course, understood that the eye is free from all signs of active inflammation. When possible I do a full complete preliminary iridectomy, waiting several weeks if necessary before extracting the lens. The usual incision and flap are made. The iris is then separated from its attachment to the lens by passing a spatula beneath one edge of the coloboma and sweeping it around the circumference of the pupil until the iris is freed from the lens. The breaking of these posterior synechiae usually causes considerable bleeding, and it is necessary to wash the blood out of the anterior chamber before applying the capsule forceps. By reason of the antecedent inflammation there is usually considerable fibrous tissue on the anterior capsule which is easily grasped by the forceps. The ease with which these lenses are dislocated and delivered in their capsule would suggest that changes have taken place which render the zonule fibers very friable.

It is particularly desirable to be able to extract the lens in its capsule in this type of case, for retained cortex and capsule will almost surely cause an iridocyclitis which is likely to nullify the result of the operation. On the other hand, the eye does surprisingly well if one is successful in effecting an intracapsular delivery.

Secondary Cataract.—In dealing with the capsule which remains after a capsulotomy operation, if it is thin and does not give the appearance of toughness, I use a Ziegler knife needle. If I have reason to believe that the capsule is tough and dense, I prefer to cut it with a small De Wecher scissors through a keratome incision. An annoying and at times a serious sequela of a cataract extraction is hypertension, with the usual accompaniment of diminution of central vision and contraction of the field. In the capsulotomy operation this is occasionally brought about by the incarceration of tags of capsule and vitreous in the wound. Not infrequently a partial prolapse of the iris, not enough to act as a subconjunctival drain, may be responsible for the hypertension. I have seen it occur following an intracapsular extraction where the iris has become adherent to the hyaloid at the pupillary margin, and in a few cases of hernia of the vitreous into the anterior chamber. By cutting the capsule and vitreous bands with a knife needle or, if the former ap-

pears too dense, with a De Wecher scissors, the hypertension may sometimes be relieved.

If the hypertension occurs following an intra-capsular extraction, I have used a small Homer Smith capsulotomy needle to separate the margin of the pupil from the underlying hyaloid, cutting through the latter upon withdrawing the needle.

Finally it may be necessary to trephine below. Some surgeons have succeeded in reducing the tension by withdrawing one of the pillars of the coloboma beneath a previously dissected conjunctival flap as is done in the iridotaxis operation. I have had no experience with this procedure, preferring to trephine below or even on either side.

GLAUCOMA WITH COMPLICATIONS

We are often confronted with the problem of what to do in simple glaucoma complicated by the development of cataract. I feel that I have no right to offer advice, for my experience has been too limited. At any rate I shall give you my views in the hope that there may be something helpful in them.

If, when the patient with simple glaucoma is first seen, incipient cataract be present and there is reason to believe that in the near future, in spite of the control of the glaucoma, sight will be impaired to such an extent so as to necessitate an extraction, two courses are open to us. One, we may elect to trephine above and later extract the lens below, or, two, we may perform a La Grange sclerectomy above and later extract the lens, as usual, above. I have practiced both of these procedures successfully and recommend them for your consideration.

The surgical procedures which have been advocated for the permanent reduction of the hypertension in glaucoma have been many and varied. As this paper is intended to be one of personal experience and preference, I shall refer only to the few that I have used.

It is the almost universal practice, in this country at least, to relieve an acute congestive glaucoma by making a broad, deep iridectomy. With the technique of this operation you are all familiar. Let me recommend that before operating, whether by local or general anesthesia, that a deep orbital injection of 2 per cent novocain and adrenalin be given. I was called upon to operate upon a woman with an intumescent cataract which had caused an acute congestive glaucoma, and inasmuch as it was inadvisable to give a general anesthetic, I gave her a deep orbital injection of novocain and adrenalin. Before I was ready to make my incision the tension had diminished appreciably, and the extraction of the cataract was uneventful and painless.

In simple chronic glaucoma, Elliot's sclero-corneal trephine operation, La Grange's sclerectomy and Borthen's iridotaxis are the operations which most surgeons employ. For a time I was partial to iridotaxis, and I have a number of cases in which it reduced the tension satisfactorily, but the unsightly pear-shaped pupil, and in several cases a rather large bleb which overlapped the

cornea, made me abandon it in favor of trephining. I believe also that in a given number of cases trephining will reduce the tension more effectively than iridotaxis. This is particularly true in cases of long standing in which the base of the iris is firmly attached to the posterior surface of the cornea. I know of several patients whose eyes I might have saved had I chosen to do a trephining instead of an iridotaxis.

I do not believe anyone can improve on Elliot's operation so far as technique is concerned, and my only departure from it is to make my incision in such a way so that the ends may be as far removed from the cornea as is consistent with an adequate exposure of the area to be trephined. This leaves a large area of undisturbed subconjunctival tissue to either side of the trephine opening, thereby greatly increasing the drainage facilities.

ENUCLEATION

I feel as though I should apologize for touching upon the subject of enucleation, and yet I feel sure that many surgeons still adhere to the practice of simple enucleation without implanting some substance into Tenon's capsule. I have been using the Frost-Lang operation since 1910 with very satisfactory results. Many substances have been advocated, but I have found that a hollow gold sphere about 16 millimeters in diameter is easy to procure, simple to insert and usually stays in place. I have yet to have one extruded. In several cases I tried an implant of fat. This lengthened the operating time considerably, and I do not believe that it is any better than a gold ball. In enucleating under local anesthesia, as one occasionally does, it certainly complicates the operation to be obliged to block off an area on the abdomen in order to remove the necessary fat and fascia. Enucleation under local anesthesia may be performed painlessly provided the patient is at all tractable. A preliminary injection of morphin and hyoscin places the patient in what Crile calls a neutral state. By nerve-blocking the lids to relax them, injecting around the insertion of the muscles and along their bellies, and by catching the long and short ciliary nerves with a deep orbital injection augmented by more of the anesthetic, injected back of the globe after the recti are severed, an almost, if not completely, painless enucleation may be performed. It has been estimated by Labat that one may inject with safety as much as 30 cc. of 2 per cent novocain in the average individual.

The point in technique which has served me satisfactorily and which I should like to pass on to you, is that I make no attempt to catch up the individual muscles, but instead cut them close to the globe, disturbing their attachment to Tenon's capsule as little as possible. After the eye is enucleated and bleeding has been stopped, a pledget of cotton is inserted in the capsule to absorb any oozing, while a purse-string suture is placed in the capsule. This is of No. 4 braided silk entered from the lower conjunctival surface and passed

over and over the free edge of Tenon's capsule, making its exit on the conjunctival surface alongside the point of entrance. After the pledget of cotton is removed, the gold ball is inserted, the suture drawn taut and the ends threaded through the holes of a small button and tied on the conjunctival surface. The conjunctiva is sutured horizontally with No. 1 black silk. The buried silk suture may be removed in ten days.

There is nothing original about this technique, but I can recommend it as very simple, effective, and capable of imparting considerable rotation to the prosthesis.

CONJUNCTIVOPLASTY

Finally, I should like to call your attention to the value of conjunctivoplasty, not only in injuries to the anterior ocular segment, but also in certain types of corneal ulcers. In incised and lacerated wounds of the cornea and sclerocorneal junction either with or without iris prolapse, if the injury is at all extensive an apron of conjunctiva may be fashioned and the wound covered. If there is iris prolapse this must be excised and the lips of the wounds cauterized either with phenol or trichloroacetic acid before it is covered with conjunctiva. Certainly many eyes have been saved by this procedure which might otherwise have been lost.

Not alone in injuries to the cornea, but in ulceration of this membrane as well has conjunctivoplasty proven its usefulness. In this connection let me quote from a paper in which I reported a case in which one eye was affected with marginal ring ulcers and in which conjunctivoplasty undoubtedly saved it.

REPORT OF CASE

The patient whose left eye serves as the basis of this report was a Scotch woman, fifty-eight years of age, married and the mother of two grown sons. She was thin, spare, enjoyed poor health and hoped for the worst. She was absolutely devoid of a sense of humor and was chronically underfed from choice. This element of undernourishment undoubtedly was a large factor in the development of the severe ulceration of her left cornea which very nearly destroyed this entire membrane.

In August 1924, the patient consulted me complaining of a scratchy feeling in the right eye. Examination of the eye revealed a localized area of pericorneal injection to the nasal side of the cornea. Just at the limbus there was a small round ulcer which stained with fluorescein. Ointments containing holocain and mercurophen, holocain and novoform, were used, alternating with a 2 per cent solution of mercurochrome and a zinc and boric lotion. The ulceration finally healed although it took a month to do so.

One month later she had another attack in the same eye, and of the same character; this healed promptly with the same medication as used in the first attack. After the lapse of a year, during which time she was free from any ulcers, she returned with quite a large ulcer on the left cornea. One week previously she had had what she described as an acute sore throat. Since then both eyes had been uncomfortable, but the left one showed the ulceration.

The ulcer was about 4 millimeters long by 1 millimeter wide, concentric with the limbus, extending from nine to eleven o'clock. It was yellow-gray in color, and for a time showed no tendency either to spread or heal. Scrapings from it failed to show any distinctive organisms. Pericorneal injection was localized, and at this time there was no iritis, although this de-

veloped later. At first the ulcer was treated with holocain, mercurophen and zinc, which made no impression on it. Applications of 2 per cent mercurochrome and iodine were made to the base after curetting away the slough. Pasteurization after the method of Prince and the use of the thermophore, both seemed to irritate rather than allay the subjective symptoms, and certainly failed to check the ulcer's spread. Milk injections were also used.

At this time it became evident that what at first seemed to be but a mild form of ulceration, was indeed formidable and was spreading slowly but surely. Fortunately the extension was concentric with the limbus, at no time showing any tendency to advance over the pupillary area. In fifteen days, however, the ulcer had spread from its original position, between nine and eleven, so that it came to occupy that portion of the circumference of the cornea which lay between five and two o'clock, leaving but a quarter of the circumference of this membrane free, between two and five. Throughout its course it was concentric with the limbus and varied in width from 1 to 3 millimeters opposite one o'clock; it measured nearly 4 millimeters in width.

Under cocain anesthesia the ulcer was curetted, and over the base and beneath the edges, the flat end of a toothpick saturated with 50 per cent trichloroacetic acid was passed. This, too, failed to check its progress. Fearing to wait any longer a conjunctivoplasty was decided upon and performed under ether.

A flap of conjunctiva was dissected from above and one from below the cornea, and they were drawn over the cornea in such a manner as to leave a small, shuttle-like clear space in the center of this membrane with its long axis between ten and four. The two stitches placed at the limbus were at these points. Both eyes were bandaged three days. After this the unoperated eye was uncovered. The lower stitch, that opposite four o'clock, gave way several days later, and the upper one was removed in a week. The lower flap of conjunctiva gradually receded to its original position, leaving the underlying cornea smooth and healthy. In this portion of the cornea the ulcer had not burrowed very deeply into the substantia propria and, although Bowman's membrane was destroyed and the defect filled in with scar tissue, the resulting scar was much less dense than one would have expected.

Unlike the lower flap of conjunctiva, the upper one remained in position over the cornea, and failed to retract completely to its original position. That portion which remained filled in the upper limb of the ulcer, and formed part of the ultimate cicatrix. However, there was enough recession to insure a free pupillary area.

Fortunately the patient has a slight natural ptosis and only a slight scar. From a cosmetic standpoint the result left little to be desired. Of course, the cicatricial contraction left a rather high myopic astigmatism, but since the pupillary area was not attacked by the ulceration it is regular, and with correction the patient's vision is 20/30.

The technique of conjunctivoplasty presents particular difficulties, and is familiar to you all. Care should be taken to make the flap large enough so that there shall be the minimum amount of traction on the suture.

Conjunctivoplasty certainly proved of immeasurable value in the case above reported. I am convinced that had I not used it the patient in all probability would have lost her eye.

Not long after the above report was submitted the patient's other eye became involved in a similar manner. Profiting by the experience of the first eye, conjunctivoplasty was practiced earlier and with as gratifying results.

Four-Fifty Sutter.

ACUTE GENERAL PERITONITIS*

By ROBERTSON WARD, M. D.

San Francisco

DISCUSSION by Frank W. Lynch, M. D., San Francisco;
Wayland A. Morrison, M. D., Los Angeles.

A RATIONAL THERAPEUTIC REGIMEN

THE treatment of general peritonitis differs from that of most intra-abdominal lesions in one major aspect which is not generally enough appreciated and which is the keystone to rational and successful therapy. The feature which differentiates it from other lesions is this: the disease and its involved area cannot be treated directly. Only when this is recognized, understood and taught, will peritonitis be coped with properly according to the means now available. The present trend of abdominal surgery is to locate and attack directly the diseased organ, the appendix, stomach, intestine, biliary apparatus, pancreas, spleen, and pelvic organs being numbered among the intra-abdominal viscera which we so treat. The peritoneum, if for no other reason, is eliminated from direct therapy because of its extent.

Granting that the involved area cannot be treated directly, we must then launch our therapeutic attack in other directions, and these are, first, the elimination of the cause, and second, the neutralizing of the harmful influence of the four handmaidens of peritonitis, namely, gastric dilatation, ileus, toxemia, and dehydration.

ELIMINATION OF INCITING CAUSE OF PERITONITIS

The phase of therapeutics involving elimination of the inciting cause needs little discussion. It is generally recognized, and rightly, that the exclusion of a source of constant reinfection is most essential in the proper treatment of infections in large cavities. Hence the removal of a gangrenous appendix, the closure of a perforation, the elimination of a draining focus in rupture or gangrene of the gall bladder and the exteriorization or resection of gangrenous bowel are of paramount importance in removing the cause of peritonitis. Here our intraperitoneal therapy should end. By this I mean that drainage is unnecessary and actually harmful in general peritonitis and that the only excuse for the use of abdominal drains is in creating a path of least resistance for the evacuation of a walled-off abscess. The common use of drains in the peritoneal cavity is a bad habit handed down to us and practiced through fear or ignorance, because it has been done by others before us.

In 1905 a comprehensive study of abdominal drainage was published by Yates.¹ His conclusions were sound and his work warrants more

attention than has apparently been given it. The following conclusions can be drawn from his work:

1. Drainage of the general peritoneal cavity is physically and physiologically impossible.

2. The relative encapsulation of the drain is immediate, while the absolute encapsulation occurs early (less than six hours in dogs) and can be retarded but not prevented.

3. The serous external discharge is an exudate due to irritation of the contiguous peritoneum by the drain.

4. There is a similar inward current from the potential cavity about the drain to the general cavity.

5. Adhesions, under approximately normal conditions, form about any foreign body, their extent and density depending upon the degree and duration of the irritation.

6. Primarily fibrinous, these adhesions become organized in a few days (three in dogs), and if irritation persists they become progressively more mature fibrous tissue.

7. After irritation ceases, their disappearance depends mainly upon mechanical factors—the ability of the involved surfaces to pull themselves or be pulled apart.

8. A drain in the presence of infection is deleterious to peritoneal resistance.

In the light of these conclusions one can see that attempts to drain the peritoneal cavity are not only futile but harmful in that they leave a potential menace in the form of adhesions. This point is graphically illustrated by Meyer,² who reports that 78 per cent of ninety-five cases of acute intestinal obstructions in his series were due to adhesions from previous operations. Even assuming the correctness of Horsley's³ contention that drains reverse the lymph flow we are still unjustified in their use because recent work tends to show that the toxins we attempt to eliminate by drainage are intra-intestinal rather than intra-peritoneal.

NEUTRALIZATION OF TOXEMIA

Having considered the elimination of the infecting focus, the first line of attack in our treatment, we are ready to combat those influences of peritonitis which are its weapons of destruction, namely, those pathological changes leading up to and causing toxemia. In this field, particularly, are we guided by recent research work of clinical and experimental nature which points out that our problem now becomes the same as dealing with intestinal obstruction. The symptoms, blood chemistry and findings in general are identical in the two conditions. The clinical similarity of the two conditions was thoroughly recognized even before the physiological chemists had demonstrated the parallel courses by blood chemistry. Moynihan had said "There is no appendicitis without obstruction," and this statement, if true

* From the Department of Surgery, University of California Medical School.

* Read before the General Surgery Section of the California Medical Association at the Fifty-Eighth Annual Session, May 6-9, 1929.

of appendicitis, is multiplied many fold when applied to peritonitis."

Upon the cause of toxemia in these conditions much light has been thrown by recent work. David⁴ has shown that while bacteria will pass directly into the blood and lymph streams from a normal peritoneum or one containing ascitic fluid, a well-developed plastic peritonitis will prevent this passage. Lesser grades of peritonitis, he has shown, prevent passage into the blood stream but not into the lymphatics and thoracic duct. He concludes that the main problem in peritonitis is not one of septicemia or bacteremia.

Ellis⁵ has recently published an exhaustive work on the nature of the toxin in obstruction and has coordinated the theories of the foremost workers in this field. A summary of his findings is as follows: (1) A poison can be isolated by extraction and precipitation from the intestinal content in high obstruction, which is neither a proteose nor heteroproteose. (2) It is not possible to obtain this toxin from normal intestinal content. (3) The poison is identical, judged by means at our disposal, to that found in other conditions such as after adrenalectomy, in portal obstruction, acute pancreatitis, and experimental acute fulminating, nonbacterial peritonitis. (4) The toxin is undoubtedly in the cells of the greater part of the mucosa of the small intestine, but chiefly of the *duodenum*, and is manifestly excreted into the lumen of the intestine, but the larger part into the lymphatic stream. (5) The clinical advantage of gastric lavage may be explained by the removal of the toxic content, favoring thereby an increased excretion into the lumen of the intestine rather than into the lymphatics.

Whether we agree with Bouchard⁶ that the poison is of fatty acid origin; with Nesbitt⁷ that it is neurin; with Clairmont⁸ and Murphy⁹ and others that it is of bacterial origin; with Dragstedt¹⁰ that it is from putrefactive action of bacteria; with Whipple¹¹ that it is heteroproteose in nature, or Williams¹² that it is an anaerobic toxin, the essential point in treatment is the removal of the toxic substance so that it may not be absorbed.

A host of observers have recently advocated enterostomy as the essential procedure in elimination of toxemia. Some have based this procedure on well-controlled experimental work and others have done it empirically because good results have been obtained. Whereas the original advocates of enterostomy chose a point low on the intestine, the recent trend has been to drain higher because results were more satisfactory and because it has been found that the toxic factor is more abundant in the upper small gut. Clute,¹³ in reporting his clinical results in a series of these cases, finally decided that "the higher the drain is inserted in the small gut the better the opportunity of draining the toxic products of obstruction."

In peritonitis or obstruction Macrae¹⁴ recently advocated a high jejunostomy as the procedure

of choice. He makes a plea for prophylactic jejunostomy in cases where trouble may be expected following the primary operation. When the patient's condition is so extreme as to make hazardous the elimination of the infecting focus he contents himself with jejunostomy alone. His argument is well presented and convincing, but it will be hard for any surgeon to relinquish treatment based on so sound a fundamental principle as that of removing the original focus. If you become convinced, as I have, that this principle of intestinal drainage is a sound one and still are unwilling to allow your desperate risk abdominal case to fight with the poorest of weapons against a focus which can be eliminated surgically, you will strive to accomplish both tasks.

And, further, if you could accomplish the drainage of the upper intestinal tract without operation you would consider that your first duty to the patient.

DESCRIPTION OF APPARATUS FOR CONTINUOUS GASTRIC AND DUODENAL LAVAGE

Herein lies my reason for presenting this paper. In 1925 I described an apparatus for continuous gastric and duodenal lavage.¹⁵ There was nothing original or new in any of the ideas involved except that two frequently used medical procedures were combined into an effective method. My reason for describing the mechanism was that I felt tremendous good would be done as soon as the procedure was universally adopted. I still feel this, and I am making a second plea with more than a simple description of the apparatus. My entire attitude and prognosis in regard to general peritonitis has been changed by its use. In former years we had our share of deaths from general peritonitis while a recent survey shows that in the last four years we have not had a single death from peritonitis not complicated by other conditions such as pneumonia, septicemia, or the like.

In a few words, it is a continuous duodenal and gastric lavage by means of a small tube passed through the nostril and attached to a mechanism for continuous mild suction. The apparatus, as shown in the illustration, consists of a so-called Connell suction attached to a duodenal tube. This

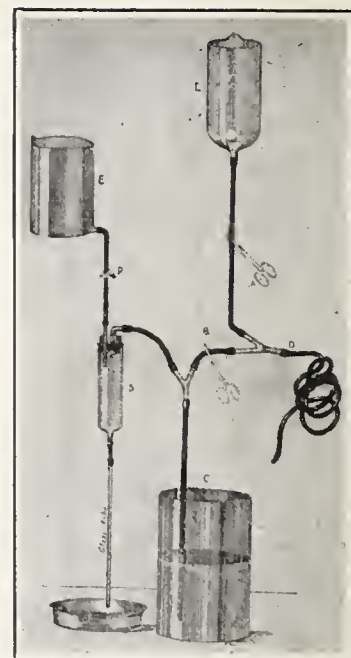


Fig. 1.—Apparatus for continuous gastric drainage. D, Levin duodenal tube No. 14 French, to be slipped through nostril; A, hemostat clamped on tube to lavage solution L, which is changed to B only during lavage; C, drainage tube, the end of which must be kept submerged; S, Connell suction apparatus, the barrel of a triumph syringe fitted with a two-holed rubber stopper. Constant dripping from container E, regulated to about 100 drops per minute by petcock P, causes a mild negative pressure due to the air bubbles carried down the glass tube between drops of water.

tube may be the type proposed by Jutte or Levin and popularized by Matas,¹⁶ but may be improvised simply by introducing a few lead shot as weight into the end of a long Dakin tube with multiple perforations extending for a few inches from the tip. Any tube that can be slipped easily through the nostril will do, but I have found the catheter-tipped Levin duodenal tube, No. 14 French, most satisfactory. All the paraphernalia may be found on hand in any hospital.

The constant dripping from the receptacle (E) produces a mild suction which is comparable to simple siphonage with the advantage that this negative pressure is maintained even after the siphon action may have been destroyed by passage of gas from the stomach. By the use of this apparatus the stomach, duodenum, and upper jejunum can be kept continuously empty of fluid and gas. The relief of bowel distention in this manner overcomes obstruction to a large extent as shown by Gatch,¹⁷ who points out that distention alone will cause necrosis when the pressure within the loop reaches that of the venous pressure. It has all the advantages of a jejunostomy without the disadvantage of an extra surgical procedure in a bad risk case, and, further, the amount and rate of drainage may be exactly controlled, thus eliminating the possibility of persistent dehydration due to jejunal fistula after removal of toxins has been accomplished. Ease of accomplishment and a minimum of discomfort to the patient are two of its attributes. In fact, the comfort obtained by relief from vomiting and distention has made many of my patients beg for its continued use when removal was suggested.

Since the value of Haden and Orr's¹⁸ blood chemistry work has been recognized and their methods of combating toxicity in intestinal obstruction have been put into effect we have come to realize more than ever the importance of a high sodium chlorid intake. These authors have shown that administration of salt solution in large amounts will not only prevent the fatal drop in the blood chlorids but will tend to bring down to normal levels the urea and nonprotein nitrogen. They have prolonged life and brought blood chemistry back to normal by administration of salt solution subcutaneously and by mouth in experimental obstruction. They decided that sodium chlorid has a specific action, not obtained by glucose or other agents, in preventing and controlling the changes produced by the toxin.

With these principles in mind our patients are given daily from 3000 to 8000 cubic centimeters of normal saline solution subcutaneously during their stage of ileus and 4 per cent salt solution is used frequently for lavage through the duodenal tube, thus applying our antitoxic agent directly in the area of known toxic absorption. Our use of glucose solutions intravenously is infrequent compared with subdermal saline therapy. Until the obstructive stage of peritonitis is passed, nourishment, if given at all, is furnished by continuous rectal drip instillation of glucose solution allowing at the same time for the passage of flatus.

Other features of treatment are the avoidance of any attempts to promote peristalsis and the encouragement of intestinal immobility by use of morphin and opium. No attempts to obtain bowel action other than gas-eliminating enemas and rectal tube are used, and the enemas are withheld until the patient's condition indicates complete mastery of the peritoneal infection. Additional comfort to the patient may be obtained by the semireclining (knees slightly flexed) position with its consequent removal of abdominal and diaphragmatic tension. Large hot stupes are applied over the entire abdomen, and these are much appreciated by the sufferer.

SUMMARY

To summarize those measures which we consider essential to the proper treatment of peritonitis we have:

1. Elimination of the cause with as little manipulation and trauma as possible, which means, of course, without the use of any foreign material in the form of drains.
2. Continuous transnasal duodenal and gastric drainage with frequent saline lavage during the stage of dilatation and ileus, this to be instituted at the first sign of distention and continued till the tone of the bowel is restored, as shown by the rapid absorption of saline solution introduced through the tube.
3. The administration of large amounts of normal saline solution beneath the skin to maintain fluid balance and the proper level of blood chlorids.
4. Morphin and opium as demanded for comfort, quiet and peristaltic inactivity.
5. Maintenance of a comfortable position, usually the semi-Fowler, with application of moist external heat to the abdomen.

Of all these procedures, after elimination of the focus, we feel continuous drainage is the most important, and I repeat the sentiment of Bassler¹⁹ expressed a few years ago to a meeting of the Southern Medical Association. If I leave you nothing more than an appreciation of the life-saving value of continuous gastric and duodenal lavage, my work has been well done.

384 Post Street.

REFERENCES

1. Yates, J. L.: An Experimental Study of Local Effects of Peritoneal Drainage, *Surg., Gynec., Obst.*, 1, 473, 1905.
2. Meyer, K. A., and Brams, W. A.: A Clinical Study of Acute Intestinal Obstruction, *Illinois M. J.*, 51, 43, 1927.
3. Horsley, J. S.: Surgical Drainage from a Biologic Point of View, *J. A. M. A.*, 74, 159, 1920.
4. David, V. C.: Peritonitis—An Experimental Study, *Surg., Gynec., Obst.*, 45, 287, 1927.
5. Ellis, J. W.: The Cause of Death in High Intestinal Obstruction, *Ann. Surg.*, 75, 429, 1922.
6. Bouchard—quoted by Ellis.
7. Nesbitt, Beattie: On the Presence of Cholin and Neurin in the Intestinal Canal During Complete Obstruction, *J. Exper. Med.*, 4, 1, 1899.
8. Clairmont, P., and Ranzi, E.: Zur Frage der Autointoxication bei Ileus, *Arch. f. klin. Chir.*, 73, 696, 1904.
9. Murphy, F. T., and Brooks, Barney: Intestinal Obstruction, *Arch. Int. Med.*, 15, 392, 1915.

10. Dragstedt, L. R., Moorhead, J. J., and Burcky, F. W.: Intestinal Obstruction, *J. Exper. Med.*, 25, 421, 1917.

11. Whipple, G. H., Rodenbaugh, F. H., and Kilgore, A. R.: Intestinal Obstruction, *J. Exper. Med.*, 23, 123, 1916.

12. Williams, B. W.: Importance of Toxemia Due to Anaërobic Organisms in Intestinal Obstruction and Peritonitis, *Brit. J. Surg.*, 14, 295, 1926-27.

13. Clute, H. M.: Enterostomy in Peritonitis, *S. Clin. North America*, 8, 129, 1928.

14. Macrae, Donald Jr.: Management of Acute Conditions of the Abdomen, *J. A. M. A.*, 89, 1113, 1927.

15. Ward, Robertson: An Apparatus for Continuous Gastric or Duodenal Lavage, *J. A. M. A.*, 84, 1114, 1925.

16. Matas, Rudolph: The Continued Intravenous Drip, *Ann. Surg.*, 79, 646, 1924.

17. Gatch, W. D., Trusler, H. M., Ayres, K. D.: Causes of Death in Acute Intestinal Obstruction, *Surg., Gynec., Obst.*, 46, 332, 1928.

18. Haden, R. L., and Orr, T. G.: The Effects of Sodium Chloride on the Chemical Changes in the Blood of the Dog after Pyloric and Intestinal Obstruction, *J. Exper. Med.*, 38, 55, 1923.

19. Bassler, Anthony: The Use of the Duodenal Tube, *South. M. J.*, 12, 4, 1919.

DISCUSSION

FRANK W. LYNCH, M. D. (University of California Hospital, San Francisco).—Doctor Ward's contribution is exceedingly timely, first, because he emphasizes the futility of surgery in the treatment of acute general peritonitis and, secondly, because he re-describes the apparatus which has proved so helpful to all who know it and which has enabled them to treat rationally a group of cases which must always remain large because there are so many different conditions which may terminate in acute general peritonitis.

At first sight there would seem to be no need of even mentioning surgery as a possible method of treating general peritonitis because leading surgeons gave it up years ago. They had reason so to do because the clinical results were uniformly bad and because experimental work had proved that so-called drainage after incision was not only futile in principle, but was actually more dangerous to the patient in practice than any conservative method. Murphy's teaching did much to drive this lesson home. Yet many who attempt surgery even now do not appear to have learned these facts but continue to operate the general peritonitis case, after the offending focus has been removed, and fill the abdomen with so-called drains, often without the criticism of their better informed colleagues. Therefore Doctor Ward's comments are very much worth while.

The work of Whipple, Hartwell, McKenna, and others has shown that the intestinal secretion is extremely toxic in intestinal obstruction and that it is usually responsible for death if it supervenes: moreover, they showed that the secretion is identical in peritonitis, and in mechanical or in paralytic ileus. They demonstrated the need of gastric and duodenal lavage for any condition presenting vomiting and dilatation of the stomach and intestines. The stomach tube has proved of much value in such conditions, yet the shock of passing a large tube often proves considerable to a sick woman. The small duodenal tubes which can be passed through the nose do not have this objection. Moreover, they can be left in place for several days without occasioning marked discomfort. Yet the tube alone is not of the greatest help. Doctor Ward uses the nasal tube together with the Connell type of suction in an apparatus which makes it possible for one nurse to carry out instantly one of several procedures that otherwise would keep a physician and nurse busy for more than half an hour out of every four. The essayist has reviewed in his paper the arguments which have convinced all of

us who use his apparatus that this method of treatment does all that a jejunostomy can do and without the fundamental objections attendant upon surgery, such as operative shock, the dehydration that may attend the establishing of the fistula, and the fact that such treatment may require subsequent surgery for cure.

The apparatus enables the nurse to use any medication that can be given in solution and has proved of the very greatest value for several years to the many of us who work in the University of California Hospital.

✱

WAYLAND A. MORRISON, M. D. (1037 Pacific Mutual Building, Los Angeles).—Doctor Ward's apparatus is easily set up and has many advantages. I have used duodenal drainage by means of a nasal catheter for several years. It is the best method of relieving the distressing symptoms of high obstruction which often follow in cases of this type. Doctor Ward's results have been remarkable, and I feel should warrant the use of this method in all cases where it is indicated.

I have always felt that the usual method of draining general peritonitis cases does more harm than good. This is especially true when cigarette drains, with protruding gauze, are used. The wad of gauze causes a severe reaction and is useless. I heartily approve of the method of not attempting drainage in these cases.

I note that Doctor Ward is using glucose by rectum. It has been our experience in the Santa Fe Hospital, and has lately been proved by Dr. J. Pressman in our clinic, that glucose is only slightly absorbed by the large bowel. It has rather a tendency to ferment, and that portion which is not reduced in this way is usually expelled. We believe, therefore, that it is a disadvantage rather than an advantage to the patient. Glucose by rectum apparently stimulates the pancreas and causes a hyperinsulinization, with the resulting increased metabolism. The blood sugar is thus lowered. We feel that glucose solution should be given either into the vein or subcutaneously, and that the chlorids be kept up by saline solution by rectum, and in the manner suggested by Doctor Ward.

PSYCHIATRY IN A GENERAL HOSPITAL*

By CHARLES LEWIS ALLEN, M. D.
Los Angeles

DISCUSSION by C. A. Wright, M. D., Los Angeles; Josephine Jackson, M. D., Pasadena; Henry G. Mehrtens, M. D., San Francisco.

PSYCHIATRY, formerly but a stepchild in the family of the medical sciences, is demanding full membership in the family circle and a voice in its affairs.

The concession of this equality brings with it new responsibilities requiring more extended preparation in neurology, psychiatry and psychology, and closer touch, not only with general medical practice, but also with the affairs of the community, upon the part of the psychiatrist, who has now become "neuropsychiatrist."

Not the least of his activities are in connection with the general hospital, where his technical knowledge and experience can be utilized to good effect in the many problems of such an institution.

UNDERLYING FACTORS IN MENTAL PHENOMENA

Mental phenomena are in the main reactions to stimuli from within and from without and are conditioned, in the first place, by the original con-

* Read before the Neuropsychiatry Section of the California Medical Association at the Fifty-Eighth Annual Session, May 6-9, 1929.

stitution of the individual, and in the second, by a multitude of factors, external and internal.

Among these latter not the least is the presence of physical disease and injury with their accompaniments of infection, intoxication, hemorrhage, pain, exhaustion, malnutrition, insomnia, fear as to the outcome, anxiety for dependents, homesickness and general dislike of surroundings as well as disturbances associated with organic changes or perverted function in the vital organs, particularly in the brain. So in the hospital we are particularly apt to find combinations of factors tending to interfere with the normal mental reactions and to render them pathological.

Added to this, the large public hospital is patronized chiefly by the poor, unfortunate and neglected, among whom the number of the inadequate and unstable is disproportionately great; hence abnormal mental phenomena are there to be expected considerably more frequently than among the general population.

In all medical practice, including that of the hospital, attention should be directed to the emotional factors, both those inherent to the make-up of the individual and those arising from other causes. It has been satisfactorily demonstrated that the reaction to disease can be greatly modified by such factors.

Particularly are the temperature, the action of the heart, the vasomotor mechanisms, the smooth muscle fibers of the gastro-intestinal tract and the glands susceptible to the influence of the emotions, and recognition of this fact may help to prevent diagnostic and prognostic errors.

In line with the above the importance of the psychoneuroses, which are built up largely upon an emotional basis, is to be emphasized. It is true that they do not figure so prominently in hospital patients as in an ambulatory practice. Nevertheless they are ever present, and familiarity with them is only acquired through neurologic and psychiatric experience.

PSYCHIATRY IN MEDICAL CURRICULA

It has been insisted that if, in the instruction of our medical students, the time allotted to psychiatry should be devoted chiefly to the psychoneuroses and their problems, the knowledge gained would be of more practical value to them than if it was spent studying the major psychoses, which can rarely be handled out of institutions, while these minor mental affections must, in most instances, be treated at home by the general practitioner.¹

Though this suggestion has considerable force, the writer feels that sufficient understanding of the actual psychoses to make possible an enlightened and scientific attitude toward them should be a part of the education of every physician.

FREUDIAN INTERPRETATION OF PSYCHONEUROSES

According to the Freudian ideas, the symptoms of the psychoneuroses represent attempts at adjustment of submerged complexes, which, being emotionally conditioned, are painful, or at least disagreeable, and so are brought into conscious-

ness only as manifestations symbolic of the hidden material.

While not all of us accept Freud's views in their entirety, the prevalent opinion is that emotionally toned complexes are probably at the bottom not only of many mental reactions, but also of a large proportion of the physical symptoms usually denominated "functional," which so frequently color disease pictures.

The psychiatrist who is—or should be—familiar with such manifestations, whether he practices psychoanalysis or not, is, in his own way, more likely to unearth these hidden complexes than the nonspecialist. He can be of great assistance in tracing to their proper source the many manifestations of hysteria, the great simulator. An important psychiatric problem is furnished by the constitutional psychopath whose defect is emotional unbalance, rather than intellectual defect, and who may show abnormal mental reactions in health, but more particularly in disease. These are the border-line cases between the neuroses and psychoses, always troublesome and sometimes crossing the line to the side of the psychoses so far as to need psychiatric care.

LOS ANGELES GENERAL HOSPITAL SERIES HERE REPORTED

Of the large material of the Los Angeles General Hospital only such cases as have been under care on the medical or surgical wards and have been transferred to the psychopathic department on account of mental symptoms are considered in this paper.

Looking these over, it has been found impracticable at this time to present exact statistics concerning the diseases in which mental symptoms were observed; neither does such a compilation seem desirable in a short review. However, we have gained the following impressions in our work at that institution.

A psychiatric consultation was usually requested because a patient was restless, noisy and disturbing the ward, or because his talk and his actions were such as to suggest the probability of his injuring himself or others.

In order of frequency these phenomena occurred particularly in the following diseases and conditions.

1. In cardiac, cardiovascular and renal disease, with or without focal brain symptoms, especially in old people.

2. An actual psychosis was found to exist independent of some disease or injury for which the patient was hospitalized, or the mental symptoms were not understood by the friends and were thought to indicate a physical illness requiring general hospital care.

3. Psychoses with neurosyphilis, generally paresis.

4. Delirium tremens or more chronic forms of alcohol psychoses, usually as a complication of an acute infectious disease (especially pneumonia) or of cardiorenal disease.

5. The patient was brought to the hospital for surgical treatment, for injuries self-inflicted, or the result of some other insane act.

6. Psychoses apparently due directly to infectious diseases, acute and chronic, or to such diseases as pellagra, pernicious anemia, etc., the symptomatic psychoses par excellence.

7. Psychoses in pregnant or puerperal women.

We have had few or no clearly postoperative psychoses, nearly all patients coming from the surgical side presenting other etiological factors which were probably the cause of the breakdown.

SCOPE OF A SYMPTOMATIC PSYCHOSIS

While it is true that we regard the mental mechanisms as located in the brain, the organ of the mind, we do not apply the word "symptomatic" to psychoses, plainly due to organic brain disease, but reserve this term for abnormal mental manifestations occurring in physical disease, either of other special organs or general in character, as the infectious diseases, acute and chronic, diseases of nutrition, etc., though doubtless the abnormalities observed are connected with some changes in the brain cells, usually temporary, though they may become permanent.

In the hospital the question as to whether or not we have to do with a symptomatic psychosis in a given case is naturally more acute than in the asylum.

The problem is from the nature of things quite complicated. Of all people ill with physical disease only a very small percentage show mental symptoms sufficiently pronounced to attract attention, except in the delirium of acute infections and in agonal conditions.

Possibly systematic investigation of all hospital material by trained observers would show not a few mental abnormalities, though the difficulty of separating normal from abnormal, always great, presents nearly insurmountable obstacles in people about whom we know little.

KRETSCHMER'S CLASSIFICATION

The relation of physical constitution to temperament and character and consequent mental reactions, long recognized, has been of late the subject of much discussion, particularly since the appearance of Kretschmer's "Physique and Character" in 1921.

Kretschmer² recognizes two main types of mental reaction, the "schizic," preponderating in people of "asthenic" or "athletic" body build, and the "cyclic" in those usually of large, rather rounded, but not muscular figure, the "pyknic" build.

The first show many of the reaction types peculiar to dementia praecox.

The cyclics are of the manic-depressive type and react accordingly. He also recognizes many mixed types, which in a country of so heterogeneous a population as ours are probably more common than in the relatively homogeneous material of Kretschmer.

In this type mixed forms of reaction are to be expected. Probably this is responsible for some of our difficulties in diagnosing manic-depressive psychoses from dementia praecox.

Bleuler³ insists upon the importance of affectivity and especially upon the influence of emo-

tionally toned complexes in the production of mental symptoms, particularly delusions.

Upon this idea he builds up his class of the "Psychopathic Reaction Forms," including not only paranoia and a number of more acute disturbances, but also the psychoneuroses. These have as a basis an inability to control or regulate the emotions and a tendency to sudden and violent reactions, the "primitive reactions" of Kretschmer.

Such reactions are common not only with congenital anomalies, but also in disease, since disturbances of circulation and nutrition, intoxication, infection and even long-continued action of strong emotions, cannot but influence the function of the brain cells. Psychopaths, women, children, and old people are thought to react more readily to disease than normal adults.

OTHER GROUPINGS

Anomalies of endocrine function are accused by Ewald, but it has been objected that these are probably only a part of more widespread defects.

Bauer has emphasized known differences in brain constitution; for instance, in children the space between brain and skull is relatively smaller than in adults, which should explain their greater susceptibility to increased intracranial pressure. Possibly a persistence of such infantilism may be a factor in symptomatic psychoses, as may be, also, differences in size and shape of the convolutions and in the constitution and arrangement of the ganglion cells.

This is somewhat in line with Adler's views as to "Organ Inferiority and Its Psychic Compensation."

Susceptibility to toxins and split protein products, anaphylactic phenomena, fever, the depressive effects of disease and resulting exhaustion, which reduces resistance, are also accused.

The influence of circulatory disturbances is well known: a congestion of the choroid plexuses with increased intracranial pressure due to a relative stenosis of the foramina of Monroe has been inculcated, in migraine (by Spitzer), in "angioneurotic hydrocephalus" (by Quinke), while Bauer thinks these structures an effector organ of the vegetative nervous system.

The effect of fever and dehydration has been much discussed. It is certain that in many acute psychoses we encounter the latter, usually with acidosis; so hypodermoclysis and glucose injections have come to occupy an important place in our treatment.

As to symptoms, Kraepelin discussed very fully the deliria of disease, which he divided into febrile, toxic and collapse delirium. The necessity for this division is no longer admitted, and the hope expressed by him that some day we would be able to diagnose the disease causing a symptomatic psychosis through the characteristic symptoms present seems still as far from realization as it was in his time.

We still diagnose syndromes, not diseases.

Bonhoeffer⁵ has expressed the following opinions: The longer, after a physical disease, the

mental symptoms appear the more doubtful is the connection between the two. Amnesic pictures are observed chiefly in adults and old people. If a given person reacts with the same mental symptoms to different infectious diseases, this is an individual reaction form indicating a latent tendency, possibly a manic-depressive one.

He describes the following syndromes of symptomatic origin. "Hyperesthetic emotional weakness"; "Korsakow's syndrome"; "defect conditions of amnesic or pseudoparalytic type"; "acute delirium"; "pictures resembling that of increased brain pressure," and in children, "post-infectious mental weakness." In acute delirium, not only fever but dehydration of the undernourished patient is of importance.

As to catatonia, he says, "There is no catatonic symptom which may not be found in infection psychoses." Stupor in severe catatonic cases may present throughout, the character of that of organic disease.

The close resemblance of the symptoms in an infection psychosis to those of epilepsy suggest an underlying epileptic disposition.

He concludes that we have to deal with typical reaction forms which are independent of the special infectious agent. Differentiation depends not upon the mental picture, but almost always upon the somatic symptoms, particularly upon the neurologic findings.

Both Specht and Kleist distinguish between endogenic and exogenic symptoms. For instance, manic traits running through a symptomatic disturbance suggest the influence of an individual reaction type.

Ewald thinks that bacilli and alcohol have a special affinity for the affective mechanisms of the brain.

Krisch⁴ finds the greatest difficulty in differentiating symptomatic psychoses from dementia praecox, mania with confusion, and epilepsy.

As most important diagnostic criteria he finds delirium, meningism, and particularly the "amnesic symptom complex," a clouding of consciousness of all degrees with subsequent amnesia. "Its glimmer through the disease picture is as important for diagnosis as dementia in paresis."

This is in a sense the elementary symptom, and its recognition permits the prognosis of a symptomatic psychosis as highly probable.

PERSONAL OBSERVATIONS

The length of this paper does not permit the introduction of clinical histories, but some general observations on patients who have been treated at the Los Angeles General Hospital seem not inappropriate.

1. In cardiac cases we have noted, particularly, states of confusion and disorientation, often with fallacious perceptions, not rarely with ideas of persecution (of being poisoned, robbed, "railroaded to the asylum," etc.), with restlessness, especially at night. Many of these cases have, however, been complicated by renal disease with possibly an added toxemia, also in the older people by senile brain changes.

In the younger patients a definite relation to the condition of the heart lesion, with exacerbation and remission dependent upon the state of compensation, was noted. Some patients showed manic or depressive reactions, more frequently the former.

The cases under heads 2, 3, 4, and 5 need no special discussion as they have little bearing on the main points of this paper.

6. Psychoses presumably symptomatic. All the febrile cases showed great unrest, confusion and disorientation with hallucinations, generally terrifying, often manic traits; some expressed ideas of persecution.

Cases presenting the syndrome of acute delirium showed hallucinatory confusion with marked restlessness and agitation, often violence and marked resistivity. Many became dehydrated and acidotic and there were a good many deaths. Blood cultures were usually inconclusive as it is extremely difficult to avoid contamination in patients like these. Probably under this diagnosis were included a number of different conditions. Some patients showed positive Wassermann reactions and were presumably paretics. A few autopsies disclosed tuberculosis with meningitis. In the majority of cases the underlying cause was never found.

The few postpneumonic cases were markedly confused and disoriented, had hallucinations, sometimes ideas of persecution. One attempted suicide.

The patients with pulmonary tuberculosis were generally restless and disturbed, a few were exalted, more depressed, ideas of persecution were common among them. These manifestations usually belong to the advanced stages of tuberculosis.

The few cases with Sydenham's chorea were restless and confused, one had hallucinations and later passed into a condition resembling dementia, but eventually recovered.

A case of Addison's disease, seen recently, gave a history of periodic mental disturbance during which he was excited, restless, and heard voices. This seemed to coincide with an exacerbation of the somatic disease and improved under treatment with adrenalin.

Presumably there was an underlying manic-depressive constitution in this case.

The few cases of pellagra were generally in elderly people and were terminal conditions. They showed mainly confusion, or psychoses of senile type, though one younger patient had ideas of being poisoned.

The catatonic reaction type was observed from time to time in patients who recovered, which is in line with Bonhoeffer's experience.

The puerperal cases offer nothing special, having been usually examples of toxic exhaustive psychoses, manic-depressive, or dementia praecox.

PSYCHIATRY INSTRUCTION TO INTERNS

An important part of our psychiatric work is giving instruction to the interns who serve for six weeks at the psychopathic ward, and holding

clinics for the medical students. Also our undergraduate nurses are now detailed to the psychopathic ward for part of their training and we try to teach them some elementary notions in psychiatry.

They seem to appreciate this training, and we hope in time to arouse an interest in this branch among our graduates. Postgraduate work is also offered, and nurses from this and other hospitals are taking advantage of it. The better educated are showing considerable enthusiasm and some express an intention of specializing in neuropsychiatry.

SPECIAL CLINICS

A neuropsychiatric clinic has been in operation for some time, and a "psycho-endocrine" clinic with a large clientele has been developed through the enthusiasm of Dr. E. H. Williams and Dr. C. A. Wright.

We hope to supplement these eventually with work in mental hygiene and possibly in psychotherapy, from the psychopathic ward as a center.

At least one general hospital in a city of any size should have a small psychiatric annex with a trained personnel, from which, as a center, work in mental hygiene and extramural psychiatry could be developed. This could not fail to be a benefit to the community, even in the less densely populated districts.

We are seriously handicapped by the existing laws, as interpreted by the legal officers of our county, since under these laws we are not allowed to receive a patient at the psychopathic ward without a sworn complaint and order signed by a judge.

I feel that we should work for such modification of these laws as would permit the reception of a mental patient needing hospital care, with a minimum of delay and trouble.

This has been accomplished in Massachusetts and possibly in other states.

939 Pacific Mutual Building.

REFERENCES

1. Williams, Frankwood: *Psychiatry and the Teaching of Medicine*, Am. J. Psychiat., 1928, No. 5.
2. Kretschmer, Ernst: *Koerperbau und Character*, third edition, 1922.
3. Bleuler, E.: *Lehrbuch der Psychiatrie*, third edition, 1923.
4. Krisch, Hans: *Die Symptomatische Psychosen*, Beiheft zur Monatschrift fuer Psychiatrie und Neurologie, Heft 9, 1920.
5. Bonhoeffer: *Die Psychosen im Gefolge von Akuten Infektionen, Allgemeinerkrankungen Und Innere Erkrankungen*, Handbuch der Psychiatrie, Herausgegeben von Aschaffenburg, 1912.

DISCUSSION

C. A. WRIGHT, M. D. (2417 South Hope Street, Los Angeles).—Doctor Allen has discussed in a very interesting manner a phase of neuropsychiatry which has recently been uppermost in the minds of many medical men.

For a good many years psychiatrists confined their efforts largely to making a diagnosis almost entirely from the mental symptoms, except in cerebrospinal lues. The treatment was routine and may be said to have consisted of supervision, 606, (bromids), pills and hydrotherapy.

As Doctor Allen has pointed out, many mental symptoms are associated with abnormal physical con-

ditions, which many times are apparently of etiological importance. A careful study should be made of the patient's general condition, particularly for the foci of infection—metabolic disturbances and endocrine disorders.

For several years I have recognized the close relationship between my specialty, endocrinology, and neuropsychiatry. All are acquainted with the mental symptoms seen in hypothyroidism; hyperthyroidism; Addison's disease; those associated with ovarian activity or inactivity at puberty; menstruation; the menopause and childbirth; also the mental symptoms seen in many cases of pituitary disorder. There is a very definite syndrome associated with hypo-ovarianism, characterized by depression, and which may be associated with suicidal tendencies, headaches, emotional instability, weeping, and other conditions.

A careful study should be made into the endocrine condition of every psychiatric or neuropsychiatric patient. The work of Hoskins, Langfeldt, and others gives hope that much may be accomplished by treatment along these lines.

For the past three years, at the Los Angeles General Hospital, Dr. E. H. Williams and I have conducted a psycho-endocrine clinic for the study of endocrine and border-line neuropsychiatric patients, and last year we had 1306 patients visit the clinic.

Two illustrative cases may be in order:

CASE 1.—One woman, thirty-four years of age, telephone operator, had definite systematized delusions of persecution of paranoid type at each period, together with classical symptoms of hypo-ovarianism. Was completely relieved by three months' treatment with ovarian products and has remained well for several years.

CASE 2.—Another patient, thirty years of age, had hysterectomy at age twenty; definite symptoms of hypo-ovarianism, also depression, emotional instability, finally tried to shoot her sweetheart and attempted suicide. Ovarian products were used orally and hypodermically. Our last report showed a normal patient.

Many such case reports could be made.

~

JOSEPHINE JACKSON, M. D. (1971 Morton Avenue, Pasadena).—Doctor Allen has been quick to sense the value of a new line of approach to medical problems, and clever in placing his appraisal thereof at the service of his colleagues, as witness his paper.

Personally I am of the opinion that it might be well at this time, in our speaking and our writing, to make a sharp distinction between psychiatry and psychopathology. The term psychiatry has been applied to the treatment of diseases of the mind irrespective of the underlying pathology. In certain patients the actual brain tissues may be in a state of degeneration, or the mental bias may be dependent on a heredity basis; in other words, the mental disease in such patients was dependent on impairment of the organ itself. Or, in sharp contradistinction, the organ of mind may be intact, its chemistry wholesome and without any hereditary taint; and yet the patient may be falling short in his adaptation to life. Some such term as psychopathology would serve to differentiate these two wholly dissimilar disease entities and suggest something of the necessary approach to treatment.

Doctor Allen, in the early part of his paper, stresses the importance of evaluating the emotional factors that may have entered into the patient's disturbance, not only along the line of mental reactions, but also in relation to circulatory, glandular and digestive malfunctioning. The psychopathologist, when he brings relief from physical symptoms, may seem to press rather hard on the heels of the internist. But since he does this by purely psychic measures no fault will be found.

Another practical point stressed by Doctor Allen is the greater amenability to treatment of the psychoneurotic patient as compared with that of the psy-

chotic individual. For this reason a lesser share of the student's time should be given to the study of the psychoses.

In practical fashion Doctor Allen is working toward added clinical training for nurses, interns, and postgraduates in the treatment of psychiatric cases. His own attitude of clear and sympathetic understanding of the factors at work in the psychoneuroses, and emotional insanities will go far toward solving the problems of medical attendant, family, and patient as well.

Doctor Allen briefly and accurately sums up the Freudian interpretation of the psychoneuroses as attempts at adjustment of complexes that have been submerged because painful and that gain partial expression in symbolic form. The prevalent opinion, according to Doctor Allen, is that emotionally toned complexes are probably at the bottom of many abnormal mental reactions.

Two other important points should be noted: first, that a clouding of consciousness is an elementary symptom in the symptomatic psychoses; and, second, that the symptoms will vary, depending upon the schizic or cyclic background of the patient's psychic pattern.

⌘

HENRY G. MEHRTENS, M. D. (Stanford University Medical School, San Francisco).—I have enjoyed every word of Doctor Allen's paper. It gives us a splendid summary of the manifold phases of the psychiatrist's work in a general hospital and his great usefulness to the institution as a whole. While the paper was written from work done in a municipal hospital, every word applies with equal force to the nonmunicipal hospital. Our experience with a psychiatric ward in Stanford Hospital has convinced us that the noncharity patient needs the service described by Doctor Allen even more than the patient in a city or county hospital. Every general hospital has within its walls many psychopathic cases and incipient psychoses. These patients are frequently a disturbing element in the hospital routine, when on general service. From their ranks come the attempted cases of suicide. At best, they seldom receive much benefit from the most conscientious effort directed toward their physical ailments.

These unpromising groups can frequently get the understanding necessary for their comfort and safety, as well as the possibility of a solution of their troubles, only in a psychopathic ward where an organization exists to care for their needs. The general hospital has the unique and invaluable position of being able to render aid to these patients before they or their families would consent to examination in a psychopathic hospital. Help can be given at a time when it is most effective. I hope that Doctor Allen's paper will so stimulate us that we shall never be satisfied until every good-sized general hospital is equipped to render psychiatric service of the same standard as that furnished by the medical and surgical services. Only thus can we feel that we are doing our full duty to the patients, and have advanced the cause of mental hygiene.

⌘

DOCTOR ALLEN (Closing).—I can only add a remark upon the difficulties which we in Los Angeles experienced in getting a building and in securing an adequate medical staff and nursing force.

As it is, the existing building, erected in 1914, is far from satisfactory. However, through improvements to this building and an enlarged and better organized medical staff, nursing and office force, secured through the efforts of Dr. Martin G. Carter, we are managing to handle a greatly increased material and to accomplish some useful results.

If the whole medical profession of California will stand behind the psychiatrists in an effort to obtain some very necessary modifications of the laws dealing with the psychopathic and the insane, there should be no difficulty in putting California in the front rank in the United States in the matter of the handling of these unfortunates.

ACUTE INTESTINAL OBSTRUCTION—ITS TREATMENT*

By W. B. HOLDEN, M. D.
Portland, Oregon

THE successful management of acute intestinal obstruction depends as much on the treatment before operation as on the operation itself. The general practitioner usually sees the patient before the surgeon. He is called during the first few hours of the obstruction. The suffering is so intense that the patient disregards the various cults and isms and early seeks medical aid. The usual surgical mortality of 30 per cent or more can be lowered to 5 or 10 per cent only by early operation, i. e., the first twelve or twenty-four hours.

THE DANGERS OF MORPHIN

Early operation is prevented by morphin. Morphin obscures the symptoms. The patient is made perfectly comfortable and no one can more than guess at the diagnosis. Obvious, pathognomonic symptoms are entirely concealed. The innocent-looking hypodermic of morphin is responsible for the death of at least twenty-five of every hundred operative intestinal obstruction cases. It seems difficult for the physician to sense the dangers of morphin in abdominal pathology. It is the duty of the surgeon to warn against its use to relieve abdominal pain. It is our opinion that each year in our land, more lives are destroyed by the hypodermic than by automobile accidents. Pain is not in itself deadly, but its relief by morphin often results in death. Patients will endure severe pain for long periods of time and survive—for example in facial neuralgia, sciatica, tabes, arthritis and labor. Relieve the pain of acute intestinal obstruction by morphin for forty-eight hours and the patient will likely forfeit his life.

We are told that we must not give morphin for abdominal pain until we are positive of the diagnosis. Can we be certain that the cause of the pain is not intestinal obstruction? Two of our thirty fatal cases had been given morphin for two days under the diagnosis of gall stones. We shall look in vain for improvement in our death rate until the entire profession discards the hypodermic as a remedial agent in all acute surgical abdominal diseases. We do not need better surgical operations so much as less preoperative morphin. Any surgeon in any community by repeated and continuous admonitions against the use of morphin in abdominal pain can reduce his surgical mortality in referred obstruction cases 50 per cent. In 1925, we had twenty-three referred obstruction cases with three deaths (13 per cent). The mortality of all referred cases previous to 1925 was 27 per cent. The difference represents the results of a campaign of education with my colleagues against the hypodermic in colic.

IMPORTANCE OF EARLY OPERATION

The importance of an early operation is the one point on which all writers on this subject

* Read before the General Surgery Section of the California Medical Association at the Fifty-eighth Annual Session, May 6-9, 1929.

agree. With no morphine, most cases would be operated early. Intestinal obstruction operated the first twelve or twenty-four hours will give a mortality of 5 to 10 per cent. Those operated the second day will give a mortality of probably 20 to 30 per cent, operated on the third day approximately 50 to 60 per cent, a small percentage will survive operation on the fourth day and practically all will die if operated on as late as the fifth day. An operation by a novice in surgery on the first day may have a better outcome than one done by a master surgeon on the third or fourth day. There is no medical treatment for intestinal obstruction. Cathartics do damage and nothing but damage.

SURGICAL PROCEDURES

Having established the desirability of an early operation, our plan of management is as follows:

General anesthesia—gas and ether. A long midline incision, extending from the pubis to well above the navel is necessary to readily find the obstruction. Contrary to the usual teaching, we practice complete evisceration. The operating room should be warm—80 degrees or above. The intestines are kept warm by covering with large hot saline napkins, which are renewed as they become cool. Traction on the mesentery should be avoided. The obstruction is readily found and relieved. Constricting bands of adhesions are severed, intussusceptions and internal hernias reduced, a volvulus untwisted, or an impacted gall stone removed. Gangrenous bowel will require resection, though it may be wise to leave both proximal and distal ends of the bowel protruding through the wound and unite them subsequently. Obstructing cancer cases should be done in two stages. The carcinoma is removed at the second operation. Large masses of tangled, adherent, nonstrangulated bowel may be best handled by no effort to break up the adhesions, but short-circuited by an entero-enterostomy. We have never resorted to jejunostomy in mechanical ileus. However, we have used it in paralytic ileus.

The entire bowel is emptied from the duodenum to the point of obstruction. This may be done before or after relieving the obstruction. There are conflicting experimental conclusions regarding the toxicity of the imprisoned bowel contents. Clinically, patients do very much better if the imprisoned contents are removed. This is done as follows:

A short distance below the obstruction, a linen purse-string suture is placed longitudinally in the bowel. The intestine is opened and the flanged end of a large test tube is inserted and the purse string suture drawn tight, the first tie of the knot being clamped with a hemostat. The closed end of the test tube has been previously removed and fitted with a piece of rubber tubing about two feet long. The operator's hands are well anointed with sterile vaselin. Beginning as near the duodenum as possible, the entire intestinal tract is gently and rapidly pulled through the surgeon's

fingers by the assistant. Care must be taken not to make traction on the mesentery. The distal end of the rubber tube connected with the test tube is held by a nurse, while the intestinal contents pour into a basin. Formerly, we had a much longer rubber tube, reaching to the floor. Frequently siphonage sucked the intestinal wall into the test tube completely blocking the tube. A short tube held nearly horizontally prevents this trouble. Occasionally, if there are many seeds, corn or barium in the intestine, the rubber tube may become clogged. The rubber tube may then be removed and the test tube can be cleaned with a curet or gall stone scoop. The test tube has the advantage of simplicity and is easy to obtain. After stripping the intestines once and occasionally twice, the tube is easily removed by unclamping the hemostat on the purse-string suture and loosening the first tie of the knot. As the flanged end of the test tube slips out, the purse-string suture is tightened, thus closing the opening into the bowel. A second line of Lembert sutures finishes the repair of the enterostomy. The intestines are ribbon-like and closure of the abdomen can be done with dispatch. This entire step may be completed in five minutes. The operation should not be long. Obstructed patients do not stand long operations. This method is employed in all cases of obstruction, except strangulated external hernias.

The abdominal wall is closed without drainage. A few cases of gas bacillus infection in the wall have been reported. The writer has been spared that experience. It would seem that this complication is no more likely to occur than after any other intestinal operation.

Gastric lavage is used before operation and for postoperative vomiting. Before using the above-described method of emptying the bowel, postoperative vomiting was distressing. Often gastric lavage was necessary every few hours for several days. Now, it is rare to use the lavage at all. In fact, the convalescence is as smooth as after an appendectomy.

Proctoclysis, normal salt solution, is routine. Hypertonic salt solution (3 per cent) subcutaneously has been used to combat the sodium chlorid deficiency. No cathartic is used. The intestinal walls have been overdistended by the obstruction. Rest is indicated. No food is allowed for two or three days. The bowels will generally move spontaneously by the fourth day. If not, an enema may be given on the fifth day.

Our experience is based on the following cases:

	Cases	Died	Per cent Died
Cancer	22	7	32
Strangulated hernia (all varieties)....	39	6	16
Old postoperative adhesions	62	13	21
New postoperative adhesions	11	0	0
Intussusception	15	2	13
Volvulus	12	1	8
Miscellaneous	10	1	10
	171	30	17½
Referred cases	115	27	23½
Not referred cases	56	3	5½

None of the fifty-six cases in our own practice received any morphin or cathartics. Many of the

115 referred cases had been given both morphin and cathartics before we saw them. No case of obstruction has been refused operation. The deaths include two that died after leaving the hospital, one gangrene of the lung and one abscess of the lung. In both, the abdominal pathology was completely relieved. Intestinal obstruction surgery is either delightful or distressing, depending on early or late operation.

821 Medical Arts Building.

CHRONIC PYURIA IN CHILDREN*

REPORT OF CASES

By ALBERT M. MEADS, M. D.
Oakland

DISCUSSION by W. W. Cross, M. D., Oakland; William E. Stevens, M. D., San Francisco; George G. Reinle, M. D., Oakland.

FROM a urological point of view one of the important contributions that the pediatrician has made in establishing his specialty is the insistence upon a routine examination of urine in every case. I think that he will admit that in consultation, he many times makes his diagnosis, not by superior intelligence, but by superior care, and insistence upon a thorough examination, which includes an examination of a properly obtained specimen of urine. It is estimated that one per cent of the infants and children in his practice will be found to have pyuria. The presence of pus is the commonest sign of urinary pathology, and may or may not be accompanied by other signs or symptoms.

A large percentage of the acute infections of the urinary tract clear up either spontaneously or under intelligent medical care; these are rarely seen by the urologist. A perceptible number, however, in spite of time, hygiene and medication become chronic, failing to improve at all, or recurring so frequently that the attending physician is at his wits' end. It is with this small group that this paper deals.

CHRONIC PYURIA OF ACUTE INFECTIOUS ORIGIN

Chronic pyuria in children can be classified under two main headings, namely, those that have begun as acute urinary infections without any apparent provoking cause, and those in which infection is secondary to changes in the urinary tract which favor stasis. Chronic pyuria, following an acute urinary infection, is usually secondary to an infection elsewhere and may begin acutely in the course of a tonsillitis, influenza, gastro-intestinal disturbance, et cetera. Often the lack of early treatment allows the disease to drag on into a chronic stage which may last for weeks or months with frequent acute exacerbations. It is surprising how this type of infection re-

sponds to treatment after the original focus of infection has been removed.

Cystoscopically very little is found except inflammatory changes similar to those found in the adult. The pelvic outline and the ureters are normal, save for the inflammatory dilatation.

CHRONIC PYURIA SECONDARY TO STASIS

The cases of chronic pyuria secondary to changes in the urinary tract which favor *urinary stasis*, make up a far larger group than is commonly supposed. This has been emphasized by the several excellent papers that have appeared within the last few years. This obstructive type usually remains silent until announced by an acute infection occurring above the point of obstruction either secondary to an acute infection elsewhere, or an infection of the urinary tract only. It runs a course at first not unlike the usually acute urinary infection but soon becomes chronic, rarely if ever clearing up spontaneously. Unfortunately too many of these cases are treated expectantly with medication only, so that in the intervening time between the onset and final diagnosis much damage is done to the kidneys. Conditions favoring stasis may be grouped under those that are acquired and those that are congenital. The most commonly acquired obstruction is secondary to traumatism or local infection which is followed by stricture of some type. The congenital type is seen largely in children, the incidence of congenital lesion of the urinary tract found at postmortem being from 1.5 to 2.5 per cent. This percentage should be higher because the majority of children with chronic urinary disturbances are neither cystoscoped nor autopsied.

CONGENITAL ANOMALIES FAVORING STASIS

Anomalous lesions, so common in the genito-urinary system, are found most frequently in the kidneys and ureters, although there is no portion of the urinary tract that is exempt. The kidneys and ureters, in the kaleidoscopic changes that take place during development, seem particularly apt to form figures that vary from the so-called normal. The classical kidneys, pelves and ureters of the anatomy are the exception rather than the rule. Eisendrath and Papin, in an exhaustive study of renal and ureteral anomalies have classified kidney anomalies under those of number, volume, form, location, median fusion, rotation, reduplication of the pelves and ureters, anomalies of the pelves and anomalies of the vessels. They have also classified ureter anomalies under those of caliber and form, the latter including congenital stricture, dilation, valves and spiral twists and kinks, all of these potential causes of stasis invite infection and are found only by a careful cystoscopic examination, usually after infection has taken place. The first indication of their presence in the majority of cases is pyuria.

Congenital anomalies of the urinary tract favoring stasis appear in two general zones, the upper, including the kidneys and ureters, and the lower, including the bladder neck and urethra. The upper zone is involved equally in the male

* Read before the Urology Section, California Medical Association at the Fifty-eighth Annual Session, May 6-9, 1929.

and the female, while the lower zone is primarily involved in the male and is characterized by congenital stenosis of the internal urinary meatus, congenital stricture of the urethra and congenital valves in the posterior urethra. Occasionally we see a congenital stricture in the internal urinary meatus of the female child sufficiently pronounced to cause stasis. Congenital diverticulum of the bladder is a cause of pyuria, but is not common.

In order to emphasize the importance of careful cystoscopic investigation whenever chronic pyuria is present in children, I have taken the following series of cases which show particularly well the fallacy of long-continued medical treatment. In all of these cases the attention of the attending physician was called to the urinary tract by the pyuria and because of that fact a urological examination was eventually asked for. Several excellent articles in the literature dealing with congenital anomalies of the urinary tract have appeared recently so that the cases recorded here are not new but simply add support to the argument that all chronic cases of pyuria in children as well as in adults should be given the benefit of a thorough and early urological investigation.

Before reporting briefly eleven cases of pyuria due to congenital deformities which favored urinary stasis, I wish to emphasize the fact that a cystoscopic examination not only picks out the congenital types that are improved by surgery, but it also reveals a certain number which can be classified under the head of nonobstructive pyuria, a group which is often neglected but is amenable to proper medical and cystoscopic treatment.

REPORT OF THREE CASES OF CHRONIC NONOBSTRUCTIVE PYURIA

A. Nonobstructive chronic pyuria. The following are examples of three types that have come frequently under our observation:

1. Chronic pyelitis, unilateral or bilateral. In this type the major infection appears to be in the kidney with little or no inflammatory change seen in the bladder. Specimen of urine from the affected kidney shows numerous pus cells.

CASE 1.—P. J., female, age two years; seen October 12, 1928, because of chronic pyuria discovered three months before. Has had periodic attacks of fever accompanied by great increase of the pus in the urine.

Cystoscopic Diagnosis.—Bilateral pyelitis without evidence of deformity of the urinary pelvis or ureters.

Treatment and Subsequent History.—Patient responded to internal medications and bladder irrigations.

2. Chronic cystitis and pyelitis. In this type the inflammatory changes in the bladder are very evident and the amount of pus in the bladder urine greatly exceeds that found in the kidney specimens.

CASE 2.—O. D., female, age ten years; seen April 12, 1926, because of chronic pyuria discovered one year previous during a routine examination. How long

before this the pyuria had existed could not be determined. The patient had never had any acute urinary symptoms and had apparently been in good health. The urine showed many pus cells, pus clumps and motile bacilli.

Cystoscopic Diagnosis.—Chronic cystitis and probable pyelitis (only a few motile bacilli were found in the kidney urine). Renal pelvis and ureters were normal.

Treatment and Subsequent History.—The patient was pus free after eleven months and has been normal since September, 1928.

3. Chronic cystitis. In this type all the pathology was found in the bladder.

CASE 3.—P. B., female, age six years; seen January, 1929, because of pyuria which had been present since the child was six months old. At varying intervals, she had fever and chills and the urine developed a very foul odor.

Cystoscopic examination showed chronic cystitis, dilated bladder, and a normal upper urinary tract. This case is still under treatment and has not changed perceptibly.

These three cases are representative of a group of children having chronic pyuria which we have seen, and who have responded to treatment in the most part. No congenital deformity was present.

REPORT OF ELEVEN CASES OF CHRONIC PYURIA WITH CONGENITAL ANOMALY

B. The following eleven cases are reported because of chronic pyuria which cystoscopic examination showed to be secondary to congenital deformity located somewhere along the urinary tract.

1. Deformities in the upper urinary tract.

CASE 1.—B. G., female, eighteen months old; seen because of symptomless pyuria dating back six months, discovered during an acute respiratory infection.

Cystoscopic Diagnosis.—Stricture of the right ureter in the upper fourth, right hydronephrosis and hydro-ureter, secondary pyelitis. Diagnosis confirmed by right nephrectomy. Child apparently normal March 25, 1929.

CASE 2.—J. M., female, twenty-four months old; seen June, 1928, because of pyuria and periodic attacks of abdominal cramps dating from birth.

Cystoscopic Diagnosis.—Left hydronephrosis, hydro-ureter and secondary pyelitis. Diagnosis confirmed by a left nephrectomy August 3, 1928. However, a double hydro-ureter and pelvis was found which was not diagnosed cystoscopically. The child is now well and pus free.

CASE 3.—B. K., female, age fifteen months; seen September 25, 1928, because of chronic pyuria. The patient is pale, poorly nourished and does not wish to talk.

Cystoscopic Diagnosis.—Right hydro-ureter and pyohydronephrosis. No evidence of stricture except possibly at right urethral outlet.

Subsequent History.—The child was cystoscoped again April 13, 1929. The pyuria had persisted and the findings were practically the same. The child is doing poorly and operation has again been recommended.

CASE 4.—L. G., female, age nine years; since the age of five, the patient has had abdominal pains every three to six months. That patient was sent to the uro-

logical department because of pyuria which had persisted in spite of removal of tonsils and the usual medical treatment.

Cystoscopic Diagnosis.—Right hydropyonephrosis with stricture at the right ureteropelvic junction. Nephrectomy was recommended, but refused. There has been no abdominal pain since last seen and the urine has been free of pus for seven months.

✓ ✓ ✓

2. Deformities of the lower urinary tract.

CASE 5.—F. T., male, age six and one-half years; seen September 30, 1926, because of pyuria and chronic gastro-intestinal symptoms. Bladder enormously distended, a poor urinal stream, residual urine 308 ccs. and capacity of 700 ccs. Functional test in two hours was 22½ per cent.

Cystoscopic Diagnosis.—Congenital stricture of the internal urinary meatus. Bilateral hydro-ureter and hydronephrosis, secondary infection of the whole urinary tract above the stricture.

Subsequent History.—This case was seen by Doctor Hinman later and is apparently improving under operative treatment.

✓ ✓ ✓

CASE 6.—B. T., age two years, eight months; seen February 15, 1926. Six months previous he was examined because of anuresis, after which time pus was found in the urine. He was treated for pyelitis for six months without any improvement when he was seen by Dr. Elmer Belt of Los Angeles, who made a cystoscopic diagnosis of the stricture of the posterior urethra due to two congenital valves which were broken down, apparently by instrumentation. The patient was referred to me and was last seen January 17, 1927, at which time the urine was normal.

✓ ✓ ✓

CASE 7.—J. T., male, age two years; seen September 2, 1929, because of pyuria, sepsis, and a severe anemia. The patient was referred to me by Doctor Hinman and the case was followed up to January 12, 1929, when the patient died of uremia precipitated by an attack of so-called flu.

Cystoscopic Diagnosis.—Stricture at the neck of the bladder with bilateral hydro-ureter and hydronephrosis plus secondary infection. Functional test was never over 1½ per cent in two hours, but the patient improved remarkably under a retention catheter and was to all outward appearances a normal child up to six weeks before death.

✓ ✓ ✓

3. Adult congenital cases. Many of the congenital types must die during childhood as did case 7, for only a few cases are seen in adult life that can be definitely said to be congenital.

CASE 8.—A. J., male, age thirty years; seen March 4, 1925, because of chronic pyuria, which he had known to be present for the last three years. The discovery was made after an injury to his left side, but this was probably incidental.

Cystoscopic Diagnosis.—Stricture of the left urinary meatus and also at the ureteral pelvic junction, left hydro-ureter and left pyohydronephrosis. The cystoscopic examination was confirmed by operation, 4000 cc. of pus being removed from a large sacculated kidney. The kidney was not tuberculous.

✓ ✓ ✓

CASE 9.—J. R., male, age about twenty-two; seen November 5, 1928, because of pain in the left side and pyuria. Patient had complained of this pain since he was thirteen years of age.

Cystoscopic Diagnosis.—Left hydropyonephrosis with stricture at the left ureteral pelvic junction. This was verified by operation, an enormous sacculated kidney being found extending from the diaphragm to the pelvis and containing an enormous quantity of

pus. This patient died twelve hours after operation from shock, probably precipitated by postoperative hemorrhage.

✓ ✓ ✓

CASE 10.—E. H., female, aged seventeen years; seen July 19, 1928, because of pain in the left side and pyuria which had dated back for over a year. Cystoscopic diagnosis revealed a double ureter and double pelvis on the left side with a pyelitis in the lower pelvis of the left kidney. This was verified on several occasions during cystoscopic treatment. On March 8, 1929, about nine months after treatment began, the patient was apparently well.

✓ ✓ ✓

CASE 11.—E. K., age thirty years; reported March 9, 1929, because of pyuria and difficulty in starting urine. As far back as he can remember, he has had bladder trouble, being taken by his parents from one health resort to another as a child in hope of relief.

Cystoscopic Diagnosis.—Stricture at the internal urinary meatus, multiple small diverticula of the bladder, bilateral hydro-ureter and hydronephrosis and secondary cystitis and pyelitis with a urine of 500 cc.

Diagnosis was confirmed by operation, a V-shaped section being taken out of the stricture at the bladder neck. The patient was relieved of his old symptoms, gained considerable weight, but his pyuria has persisted, although to a less degree ever since.

Comment.—This case is undoubtedly of congenital origin but unrecognized during the course of years.

CONCLUSIONS

Chronic pyuria is the most common sign of urinary pathology. Its presence should be sufficient cause for a complete cystoscopic examination. The cystoscopic findings alone will determine whether the case is medical, surgical, or both.

251 Moss Avenue.

DISCUSSION

W. W. Cross, M.D. (1624 Franklin Street, Oakland). It is superfluous to say I am interested in this subject. The essayist has covered the ground well. It would appear that this paper should have been read before the general section, as the urologist is familiar with the bacterial infection of the urinary tract, while the members of the profession working in other lines apparently are not impressed.

The mechanical factors encountered can only be corrected by the urologist and must be considered in the proper conduct of patients afflicted with this condition. Young, in his work, discussed them under general infections, the urinary tract participating, and evidently his position is well taken.

Cabot, in his work, gave to Roundtree the credit for working out the pathology of bacterial nephritis. The pathology is definite and the syndrome is constant with wide variation in the individual symptoms. Patients so afflicted usually have a low blood pressure, the nonprotein-nitrogen is not elevated markedly if any. Death is due to terminal sepsis or kidney defeat, the kidney gradually disintegrating. One urologist in New York disclosed in a children's clinic that all the lesions found in the adult were found in children. The infecting organisms vary and multiple infection is not unusual.

As urologists we should be bringing more forcibly the facts which exist in connection with this condition to members in our profession who deal less frequently with them.

✽

WILLIAM E. STEVENS, M. D. (870 Market Street, San Francisco).—It is most deplorable that infants and children have been and are being neglected so far as

the proper urological methods of diagnosis and treatment are concerned. These little sufferers are certainly entitled to just as thorough treatment as adults. We have cystoscopes now for children, and age is no longer a hindrance. Doctor Denny of Yale has cystoscoped the ureter in a male infant only twenty-nine days old. The youngest infant I have cystoscoped and catheterized the kidney was a female infant four months of age. About 50 per cent of cases of pyelitis in children are cured by conservative methods, but the other 50 per cent require cystoscopy and irrigation of the kidney pelvis. I think we should pay more attention to these young patients because they are certainly entitled to our modern methods of diagnosis and treatment.

✽

GEORGE G. REINLE, M. D. (204 Dalziel Building, Oakland).—This entire paper stresses the early investigation by the urologist. In the large majority of cases of chronic pyuria, if the focal point of infection were treated, recovery would follow a certain period of medical treatment.

Paulsen of Copenhagen reports a series of forty-three cases of pyuria, thirty-nine of which he cured in the average time of five weeks. Four cases he was unable to cure.

The type of case we are particularly interested in is the type that cannot be cured with medical treatment.

An obstruction may cause pyuria; a contracture of the vesical neck, a stricture of the urethra, a stricture of the ureter itself. Any one of these things, if left alone, will eventually develop as Doctor Meads stated, into a diverticulum, a hydronephrosis, or if the stricture be complete, into a cyst of the kidney. These conditions may continue for years until the renal system has been entirely destroyed, and children continue to be treated with medicine for years before they are referred to a urologist for examination. Before leaving home I looked over case histories of pyuria, and within a short period of time I had found twenty-three histories of pyuria that had been admitted and left the hospital without the urine being free from pus. Probably these patients were not treated long enough, or a cystoscopy not made. I can see there is a hazard in cystoscopy for very young children; that hazard is one factor which should be considered, but not to the extent that children should be denied the benefit of a complete urological survey.

POSTOPERATIVE PULMONARY EMBOLISM*

REPORT OF CASE

By H. K. BONN, M. D.
Los Angeles

DISCUSSION by W. H. Olds, M. D., Los Angeles; Clarence G. Toland, M. D., Los Angeles; Philip H. Pierson, M. D., San Francisco.

AMONG surgical tragedies postoperative pulmonary embolism is perhaps the greatest. There is no experience in surgery that is more terrible than to have a patient who is ready to be sent home suddenly die. No successful method of preventing embolism has yet been devised.

CIRCULATION CHANGES AFTER OPERATION

Walters recently stated that manifold physiologic changes follow surgical operation. Virchow in 1846 noted a tendency toward a decrease in the rate of blood flow following operation. This problem therefore presents many angles, which concern not only the physiology and chemistry of the blood and its coagulation normally, but also those factors which retard or accelerate the

process or modify the nature and structure of the clot. In the opinion of many, mechanical factors, such as the type of breathing which influences the metabolic rate, or the posture assumed in bed, which may retard the circulation, are of considerable import. Merely being in bed and at rest produces a fall in blood pressure. Walters, Hendricks, and Greene also noted a definite increase in the fibrinogen of the blood and, in most instances an increase in the leukocytes. Blood changes, as noted by Allen, in the first ten days after operation are marked by a decided leukocytosis, a decrease in the number of erythrocytes, a decrease in the total fats of the blood and an eleven per cent increase in the fibrin of the blood, associated with a slight decrease in coagulation time, most pronounced about the sixth day.

ETIOLOGIC FACTORS

Rowntree quotes Snell in regard to the occurrence of embolism in the obese and directs attention to a particular group of obese individuals, usually over fifty years of age, who are especially susceptible to postoperative embolism.

Plummer, quoted by Walters, made the observation that thrombosis and embolism practically never occur in those cases of severe cardiac decompression coincident to hyperfunctioning thyroids. This observation gives additional clinical support to the value of increased metabolism in the prevention of thrombosis and embolism. The recent papers of Rowntree, Shionoya, and Johnson on experimental extracorporeal thrombosis are in support of the hypothesis which Plummer stated from a clinical standpoint. Briefly, these experiments on rabbits were made with the use of the extracorporeal vascular loop *in vivo*, and thrombosis occurred normally in from four to ten minutes. However, when one milligram of thyroxin was administered daily for three days to each rabbit, thrombosis did not occur for from twenty to twenty-five minutes. This lengthening in time persisted for three days.

It is more than likely that other factors in addition to slowing of the rate of metabolism, posture in bed, lowering of the blood pressure and retarding of the circulation are responsible for embolism. As Walters suggests, these factors may only set the stage, and infection or changes in blood fibrin or unknown tissue and blood alterations may be the actual causative agents.

Quoting Speed, Ochsner found that there were seven deaths from embolism in 16,696 operations, or 0.042 per cent. Of this series of operations, 5275 were abdominal in type with five deaths, or 0.1 per cent. Of 528 hysterectomies in the series, there occurred one death from embolism, or 0.2 per cent. Cutler and Hunt, in 1562 cases, found 3.52 per cent lung complications, mostly emboli. They believe that one of every eight patients undergoing a major surgical procedure will have postoperative lung complications and that one of every 142 will die from such complications. Wharton and Pierson state that 50 per cent of deaths following gynecologic surgery are caused

* Read before the Southern California Medical Association meeting at Los Angeles, November 9, 1928.

by embolism. Wernbter found a mortality of 0.5 per cent in 13,000 gynecological operations. L. S. Rowntree states that in the Mayo Clinic, pulmonary embolism had a mortality of 9.65 after laparotomy for the year 1926; and more than 6 per cent mortality during the last ten years. More than 7 per cent of all total postoperative deaths since the clinic began were due to this cause. Henderson, in the series 1917-1926, covering all intra-abdominal operations, some 63,245 in number, has brought out that the number of deaths from embolism is approximately the same for operations in the upper and lower abdomen. Thus, in this series, seventy-five deaths occurred from embolism in cases of stomach, gall-bladder and bile-duct operations, and eighty-six deaths followed operations on the uterus and appendages, bladder, and prostate. However, when viewed according to the frequency of operations, considerable difference does exist. The incidence of embolism in the upper abdominal operations is one in three hundred, but in prostatectomy it is only one in sixty. The chief sources of emboli were the iliac, femoral, pelvic, and prostatic veins.

In Speed's reported series of thirty cases of postoperative embolism taken from the records of the Presbyterian Hospital, Chicago, and covering the last fourteen years, there were twenty-three deaths, a mortality of 77 per cent. These thirty cases represent a wide variety of surgical procedures, such as operations on the thyroid, the spine, the gall bladder, the stomach, the appendix, the large bowel, the prostate, the kidney, the long bones, the uterus and tubes, and varicose veins.

From a strictly urological viewpoint, V. C. Hunt's review of one thousand suprapubic prostatectomies, done for benign hypertrophy, is most interesting in that there were fifty-four deaths, eight of which were due to pulmonary embolism.

As regards anesthesia, in Speed's series, all types were used; ethylenc alone or with ether, gas oxygen alone or with ether, ether alone and novocain intrasacral. There is apparently no especial relationship between anesthesia and embolism to be noted in this series. However, as regards postoperative complications, A. H. Miller, in reviewing a series of five thousand cases, found that pulmonary embolism was one-half more frequent after gas oxygen than after ether. Exact percentages are not given. Further, it has been noted by Shilling that embolism occurs in 0.04 per cent of cases occurring after the use of local anesthesia.

CLOT FORMATION

A restatement of the supposed elements necessary to produce a clot is pertinent as a starting point in discussion of the subject. Howell's theory of the clotting of the blood, considered to be the best by many, is as follows:

Coagulation Factors in the Circulating Blood. Prothrombin, from platelets; antiprothrombin (heparin), from liver; calcium; fibrinogen.

The Mechanism of Clotting.—Cellular elements yield thromboplastic substances. Thromboplastic

substance neutralizes antiprothrombin. Prothrombin plus calcium equals thrombin. Thrombin plus fibrinogen equals fibrin equals clot.

Speed considers that the certain elementary factors absolutely necessary to produce intravascular thrombosis of blood are:

1. Thrombokinas derived from the body tissues—probably liberated by a wound trauma—finds its way via lymphatics or an open vein into the blood stream in small amounts.
2. Venous stasis must be present in or near the great veins. The presence of bacteria and toxins causing corpuscle disintegration and trauma likely aid these two principal factors.

KINDS OF THROMBI

Speed divides pathologic thrombi into two classes: aseptic, which are of friable consistency and prone to become detached and assume embolic power only in the early stages of development; and septic, which are constantly undergoing softening and disintegration and are likely to give off emboli at any and all times.

Further, emboli may be classified as to size of the emboli and the position and caliber of the occluded artery. First, a large embolus producing practical occlusion of the pulmonary artery, either on one or both sides, cuts off the blood from one or more lobes of the lung, and pulmonary edema follows rapidly, death resulting in practically all cases. Second, moderate sized emboli may pass the main vessel and become impacted in smaller vessels, thus producing infarcts in the lung, with possible pneumonia, pleurisy, or gangrene abscess as sequelae. Speed states that this group has a mortality of 12 to 15 per cent. Third, small emboli, or showers of emboli likely occur and are unnoticed and usually not diagnostic. Small pulmonary infarcts are produced with few physical findings and symptoms. Recovery ensues unless the infarct is septic, when empyema or lung abscess results.

Coughlin believes that embolism occurs much more frequently after the first postoperative week than prior to this time. The average time of the appearance of symptoms in twenty-three fatal cases, as reported by Speed, was seven days, the shortest was one day, and the longest twenty-three. Speed states that massive embolism occurs in the first week and pulmonary infarction comes during the second week. Speed's paper was read originally at the 1926 meeting of the Western Surgical Association. Coughlin, in discussing this paper, asked about one hundred general surgeons who were present to indicate by a show of hands the deaths from embolism that they had seen during the first postoperative week. About ten hands were raised. Then Coughlin asked concerning deaths from embolism occurring during the second postoperative week or thereafter. At least seventy hands were raised.

Embolism in cases of phlebitis is decidedly uncommon, according to Coughlin. Brown, in 150 cases of postoperative phlebitis, noted that embolism was rare. Thrombosis was noted in seven

cases by Speed, involving the leg six times and the thigh once.

The primary symptom of embolism, a sharp pain in the chest referred to the midline or substernal or epigastric areas is, of course, well known. Where the embolus is massive, chest findings have been negative because death ensued so quickly that adequate examination was not possible. In those cases which survived long enough to permit examination, crackling râles could be heard over the lower lobes. Speed suggests that possibly the most significant precursor of embolism is a low evening temperature, although this of course, may be absent. Acute cardiac dilatation and myocardial degeneration must be differentiated in the nonfatal cases.

SOURCES OF EMBOLI

Commonly it is supposed that emboli originate in the pelvic veins. The left iliac vein especially is considered to be the common site of pulmonary embolism because of the anatomic reason in the crossing of the arteries. However, Aschoff, in making autopsies on cases dying of pulmonary emboli invariably found extremely long emboli in the pulmonary artery. Frequently these emboli were folded on themselves and were entirely too long and too large to have come from any pelvic vessels, even the iliac. These emboli have averaged from 34 to 40 centimeters in length, that is from 12 to 18 inches and as large around as one's finger, when unfolded. Aschoff believes that these emboli came from the femoral veins but were not connected by continuity with the thrombi that may also occur in the pelvis. Aschoff does not believe that these emboli are due to sepsis and states further that no proof that a focus of infection in any given place can cause thrombosis in distant vessels unless it be by embolus or by continuity.

Speed also believes that massive thrombi must certainly come from the large iliac veins or their branches as well as from those veins in the broad ligaments. Further support of Speed's belief is to be found in the report of Cleland and Barlow, who found that 2.5 per cent of all autopsies showed pulmonary emboli and in every instance the original clots were found in the leg veins. Speed states that the common source of emboli is not in the saphenous veins, and instances De Quervain's case of fatal pulmonary embolism on the tenth postoperative day wherein resection of both saphenous veins had been done prior to a hernia operation.

In support of the premise that the unknown thrombus originates in the iliac veins, Speed gives many types of embolism, wherein thrombosis extended to the iliac veins by direct continuity, as for instance, after radium insertion in the pelvic organs. Embolism has followed the injection of bismuth paste and may occur during the manipulations incident to preparation for amputation.

Against the possibility of lung emboli originating in the thrombus of a saphenous vein is Magnus' observation that the blood stream in this vein is centrifugal when the individual is in the

upright position or walking. Also the peripheral part of the vein remains empty if the central portion is compressed.

Aschoff believes that thrombosis in the femoral vessels is always due to stasis which in turn is due to either a weak heart following operation or shock, a hemorrhage, or a position of the patient that retards circulation, such as lying in one position upon the back, perfectly still, with the lower extremities slanting to a lower level than the body.

Cutler and Hunt ascribe embolism to sepsis, easy pathways to the lung and pleural cavity by blood vessels and lymphatics, splinting of the abdominal wall by pain through partial inhibition of diaphragmatic movement.

On the other hand, it is significant to note that while there are large numbers of compound fractures of the leg and thigh, embolism is rare but fat embolism is not uncommon. Coughlin, who has had a large experience in compound fractures, says that he has never seen a death in these cases, except those that were infected, yet in this type of injury the patient is usually kept quiet.

Boyd states that emboli originate from either veins, such as inflamed pelvic or uterine or varicose veins of the leg, or from the heart, a thrombus being formed in the right and left auricular appendix or springing from vegetation on the mitral or aortic valves.

If it is true, as Hampton and Wharton believe, that the primary causes of thrombosis are infection and trauma, the secondary causes being slowing of blood stream and changes in the blood, why does embolism occur after perfectly clean operations? Here hemorrhage, as in fibroids, prior to operation could affect only one factor, that of blood change. It is acknowledged, of course, that no operation can be done without some trauma nor without some organisms being introduced, yet these cases are all considered surgically clean.

Femoral thrombosis is presumed to appear in the second or third postoperative week, which suggests that its causation may be different from that of pelvic thrombosis. Speed states that pelvic thrombosis without operation rarely causes embolism.

In 205 instances of thrombosis, in the series of Hampton and Wharton, 66 per cent were in vessels of the left leg, 24 per cent in the right leg, 9 per cent in both legs. The left femoral vein was involved in 40 per cent of the cases, the left saphenous in 12 per cent, and the left popliteal in 2 per cent. Pulmonary complications of these 205 cases of thrombosis showed: 70 per cent pulmonary infarcts; there were 1.5 per cent pulmonary emboli (three patients) with only one death; 85 per cent of autopsy examinations showed the point of origin of the embolus to be in the pelvic veins.

PREVENTIVE MEASURES

It is of course hardly necessary to reiterate that foci of infection, whether of tonsillar or dental origin, should be eliminated before operation; and

that body fluids should be increased, and the patient not be starved before operation. The condition of the heart and lungs should be carefully checked. The tranquillity of mind, induced by the preoperative dose of morphia, more than offsets its effect in slowing of the blood stream.

It is of especial interest to note that Walters has used desiccated thyroid prior to operation in three thousand cases, no embolism occurring in any patient under seventy years of age.

During the operation, pressure anywhere on the body is contraindicated. Roughness in operation is to be condemned and sharp rather than blunt dissection is to be desired. Long-continued retraction, with constant pressure on small veins, may induce thrombosis. It is inadvisable to leave clots in the operative field, and mass ligatures do not aid matters. Thorough drainage in septic cases is advocated so that the process may not spread and absorption occur.

Kennedy and Coffey have insisted for years that the thighs be flexed and gentle massage of the legs be done, beginning the day after an operation, in order to exercise the patient. Bardenhauer, with the same idea, has used a system of calisthenics for years, so that the patient would not be weak when ready to be out of bed. Yet, apparently, such exercises play a part in the prevention of embolism since Kennedy has had one thousand operations for uterine myomas without serious lung complications.

Tight dressings, such as spicas which possibly produce venous stasis, are to be avoided. Drastic cathartics, producing severe straining efforts at stool, are inadvisable.

After hearing Speed's paper, I utilized his advice on the first patient presenting for operation.

REPORT OF CASE

This patient was a woman of forty-six, a diabetic, having a bilobed uterine fibroid with an additional right intraligamentous fibroid. The patient had been carefully prepared, the performance of the operation was not technically difficult and the convalescence was smooth. All of the advised precautions had been used, except the use of desiccated thyroid. On the fourteenth postoperative day, while sitting in a chair, she felt faint for perhaps half a minute. The sensation quickly passed but was repeated the next afternoon and again she quickly recovered, each time without any medication. On the sixteenth postoperative day at 11:30 p. m., she was awakened out of a sound sleep by the usual cardiac or pulmonary pain of embolism and died in twenty minutes. Postoperative fever was not present after the first three days, nor was the temperature low. The incision was clean.

The two fainting attacks, even though transitory, were probably caused by small emboli, precursors of the massive embolus. Having tried advice given as to prophylaxis with a fatal outcome, I am now wondering if exercise may not loosen emboli instead of preventing them. Certainly, any attack of faintness occurring during the first seven to fourteen postoperative days, especially if associated with pain in the abdomen

or femoral regions, is to be carefully investigated and given due consideration.

SURGICAL TREATMENT

The operation suggested by Trendelenburg was based upon the premise that in probably 50 per cent of the cases of massive embolism only one branch of the pulmonary artery was occluded and prompt removal of this embolus would save the patient.

The technique is described in most surgical textbooks and need not be reiterated here. It is to be especially noted that forty-five seconds may be allowed between opening the pulmonary artery under pressure and the removal of the clot. A larger interruption of the circulation means certain death.

Kuschner, according to Speed, presented in 1924 the first patient cured of pulmonary embolism by a Trendelenburg operation. This patient had a massive embolus on the third postoperative day. The operation was done fifteen minutes later with the patient moribund. The large vessels were closed off for forty-five seconds, during which time the artery was opened and the blood clots, 17 centimeters in length, were removed. Wernbter is also quoted by Speed as having successfully operated upon a case of massive pulmonary embolism, the patient dying of intercurrent disease in a few days.

520 West Seventh Street.

DISCUSSION

W. H. OLDS, M. D. (607 South Hill Street, Los Angeles).—Doctor Bonn has given a very complete review of the subject of postoperative pulmonary embolism. There is little that can be added.

Small pulmonary emboli following operation, I think, are not uncommon. Frequently patients complain of sharp pains in the chest, usually low down on either side. These pains last from two to ten days, then pass away. They are probably due to emboli which lodge in the smaller vessels.

Another condition which can be and probably frequently is mistaken for pulmonary embolism is a small collapse in the lung. Thick mucous plugs lodging in a small bronchus, depriving that portion of the lung supplied by it of air, will result in a small area of collapse. This is exactly analogous to the postoperative massive collapse of the lung. How one could differentiate this condition from small pulmonary embolism I do not know.

Unfortunately in these conditions the x-ray is of more theoretical than practical value. The beautiful fan-shaped infarct seen at autopsy is not often noted by x-ray. The small infarcts and the small areas of lung collapse cannot readily be differentiated from bronchopneumonia.

In the few cases of pulmonary embolism which I have seen, it has been my observation that the pulse rate has previously been abnormally high. This is probably due to some extensive thrombosis or phlebitis which disturbs the sympathetic nervous system through fibers in the affected veins.



CLARENCE G. TOLAND, M. D. (902 Wilshire Medical Building, Los Angeles).—An embolus is a moving body in the blood stream, later lodging in an artery or in one of the branches of the portal vein.

Usually an embolus is a thrombus beginning in a vein, the heart, or an artery. However, there are other materials that may float in the blood as emboli, such

as tumor cells, bunches of bacteria, fat globules, and air bubbles.

Emboli usually start from a vein, such as thrombosed varicose veins, inflamed pelvic veins; also from inflamed veins about the appendix, gall-bladder area, stomach and duodenal ulcers and, lastly, the heart.

We have two types of thrombi from which an embolus may float: (1) Aseptic, as noninflammatory vegetations from the aortic or mitral valves of the heart. (2) Septic emboli, by far the most common, come from inflamed veins, areas of acute endocarditis. Such an embolus may give rise to an inflammation of the veins and artery in the same location, and from this a metastatic abscess may form if the infection pass through the walls of the vessels. A part of the vessel wall may weaken and form a small aneurysm and later the aneurysm may rupture and, as Boyd said, "probably this is the cause of cerebral hemorrhage in young people."

The amount of tissue affected may be small or extensive, even to the loss of a part, as a limb. The obstruction may be slow or rapid. When rapid the tissues affected die quickly.

To prevent an embolus is beyond us, but many men in the profession are doing their best to prevent it.

Doctor Bonn has quoted Kennedy, Coffey, and Walters as to their respective methods to prevent thrombus formation, thereby eliminating to a certain degree the cases of embolism. We all believe that it is important to listen to the advice of all these men.

✽

PHILIP H. PIERSON, M.D. (490 Post Street, San Francisco).—This paper discusses postoperative pulmonary embolism in a somewhat different manner than most papers on this subject. We are all aware, as stated, that small pulmonary emboli are of frequent occurrence after operation and, of course, generally of very little significance. Sterile emboli rarely cause any symptoms when lodging in a healthy field (one where there is no infection and where the circulation is normally maintained). But these sterile emboli often prepare the field for subsequent attack by either sterile or infected emboli which cause trouble. The recent work of Holman is to be mentioned along this line, showing the difference in the effect in the pulmonary field when an embolus travels into the bronchial artery from that which occurs when it travels in the pulmonary artery. As the bronchial artery nourishes the lung tissue more than the pulmonary artery, occlusion of branches of the bronchial artery often leads to more damage than in the pulmonary artery. The appearance of symptoms is not coincident with the mobilization of a thrombus, for very often when the embolus does not affect the peripheral part of the lung, involving the pleura, no pain is felt for several days. Infection developing in such an area may not manifest itself for from five to nine days. Doctor Bonn has mentioned the question of passive and active motion. It is true that gentle skin massage is of great value in promoting healthy circulation, but deep massage and more energetic exercise, I feel should be avoided for at least two weeks following operation in order that the thrombi may become well organized, thereby diminishing the danger of embolism. Of utmost importance is maintenance of healthy circulation in the lungs as a preventive of trouble resulting from small emboli. Frequent change of position, deep breathing—where possible—will aid this to a very considerable degree. The preparation of the patient before operation, clearing up any pulmonary infection and any disease in the mouth is most important. Some abscesses are favored by aspirated material from the mouth and, during the first few days following operation, the patient is quite unable to take the care that is necessary of his teeth, and from this source there is no question that some bacteria are planted in the lungs.

✽

DOCTOR BONN (Closing).—Since this paper was completed, the article of Miller and Roepke on "Thrombosis and Embolism" (Zeit. f. Chir., 1928, Vol. lv.,

p. 224), has been abstracted by the *International Abstract of Surgery* of November 1928. This article discusses the pathologic-anatomical aspects of thrombosis and embolism in an admirable manner and is perhaps the most complete exposition of the subject from this standpoint. Dietrich, Ritter, Freund, Ruff, Butzengeiger, Stegeman, Colmen, Naegli, and Killian also discuss this article, and it is interesting to note that there apparently exists abroad as much divergence of opinion on the various angles of this subject as here.

THE ASCHHEIM-ZONDEK HORMONE TEST FOR PREGNANCY*

By HARRY E. KAPLAN, M.D.

Stockton

DISCUSSION by John C. Irwin, M.D., Los Angeles; Ludwig A. Emge, M.D., San Francisco; Gertrude Moore, M.D., Oakland.

MY purpose in presenting this article is to report briefly my experiences with the Aschheim-Zondek test for pregnancy which I had the opportunity of observing last winter in the laboratories of the Jewish Hospital of Brooklyn, New York.

NEED OF A DEPENDABLE TEST

There has long been a want for a desirable and dependable laboratory test for pregnancy. Erdheim and Stumme,¹ pointed out that during pregnancy marked changes in the histologic structure of the anterior lobe of the pituitary gland take place. Smith and Engle² and Evans and Long³ demonstrated that the injection of anterior lobe of the pituitary gland into mice and rats caused marked enlargement of the ovaries. Aschheim and Zondek,⁴ confirmed these observations and discovered that during pregnancy there was a striking overproduction of the hormone of anterior lobe of the pituitary gland, leading to its excretion in the urine. They also found that the subcutaneous injection of urine of pregnant women into immature female mice was followed by striking alterations in the ovaries, manifested by swelling, congestion, hemorrhage, and the premature maturation of the ovarian follicles. These changes were easily visible to the naked eye. Louria and Rosenzweig⁵ carried out this test in one hundred and thirty-two cases. Eighty-seven specimens came from women in all stages of pregnancy and showed a positive reaction in 98 per cent. For controls they used the urine of non-pregnant women, among which were the urines from patients with fibroid uterus, ovarian cysts, functional amenorrheas, as well as normal women in the premenstrual and postmenstrual epochs and in the menopause. Specimens of urine from males were also injected for controls. These showed a negative reaction in 91 per cent.

THE ASCHHEIM-ZONDEK TEST

The Aschheim-Zondek test is performed on female white albino mice, ranging in age from four to six weeks, their weight averaging about

* Read before the Obstetrics and Gynecology Section of the California Medical Association at the Fifty-Eighth Annual Session, May 6-9, 1929.

fifteen grams. Three-tenths of a cubic centimeter of urine is injected subcutaneously three times a day for three days. The injections should be at least three hours apart, although they can be separated by more time. It is best to use a rustless needle for the injections. The mice are autopsied on the third day following the last injection or the sixth day after the first injection.

The morning specimen of urine is preferable, although the casual can be used. It is very important not to let the urine stand around and it should be used the same day. It is also very important to keep the urine on ice. A clean bottle should be used for collecting the urine.

The autopsies reveal marked changes in the immature ovaries, such as swelling, congestion, hemorrhage and maturation of the follicles. There is also an associated enlargement and engorgement of the uterus and tubes, but in accordance with the views of Aschheim and Zondek this was interpreted as being secondary to increased ovarian activity. The ovaries in immature mice are small pale bodies. On autopsy, following the injection of the urine of pregnant women, the ovaries of the mice become enlarged to three times the normal size and have a pinkish red appearance. The hemorrhagic areas are visible to the naked eye and stand out prominently on the surface of the ovary. The premature ripening follicles are easily seen as small yellow spots.

The earliest case of pregnancy examined was in a woman whose menstrual period was seven days overdue. There were several other women in the first three weeks of gestation, all of whom showed a positive test. The importance in this type of case is obvious in that a diagnosis of pregnancy is possible before physical examination is positive, thereby differentiating the pregnant uterus from the slightly enlarged nonpregnant uterus.

611 Medico-Dental Building.

REFERENCES

1. Erdheim, J., and Stumme, E.: Beitr. z. path. Anat. u. z. allg. Path., 46:132, 1909.
2. Smith, P. E., and Engle, E. T.: Am. J. Anat., 40:159, November 1927.
3. Evans, H. M., and Long, J. A.: Proc. Nat. Acad. Sc., 8:38, 1922.
4. Aschheim, S., and Zondek, B.: Klin. Wchnschr., 7:30, July 1928.
5. Louria, H. W., and Rosenzweig, M.: J. A. M. A., 91:25, Decmber 22, 1928.

DISCUSSION

JOHN C. IRWIN, M. D. (1709 West Eighth Street, Los Angeles).—I have had no personal experience with the Aschheim-Zondek test of pregnancy, but in July of 1928 had the opportunity of meeting doctors Aschheim and Zondek and watching their work at the Charité Frauenklinik in Berlin, where the test was perfected. At this clinic I saw Professor Wagner operate upon a case under a diagnosis of left broad ligament fibroid and prove the preoperative diagnosis. This diagnosis had been made because of a negative test for pregnancy in the face of a typical textbook history of extra-uterine pregnancy. This case shows the reliance placed in the test at that clinic. Similar results were being found at the clinics in Vienna, where all who had undertaken the test were enthusiastic about it.

In Berlin I was given the following figures by Doctor Aschheim:

The test was positive for pregnancy four times in two hundred and fifty-eight nonpregnant cases. In thirty-two cases of five to six weeks' pregnancy thirty were positive, and two were negative; in thirty-six cases of seven to eight weeks' pregnancy thirty-six were positive, and none were negative; in one hundred and three cases of three to ten months' pregnancy one hundred and one were positive, and two were negative; in twenty-six cases of unknown duration of pregnancy twenty-six were positive, and none were negative; or four negative reactions in one hundred and ninety-seven cases of pregnancy which equals two per cent errors.

This percentage of error is so small as compared with the Abderhalden and other serum reactions for pregnancy that it seems we can at last discard the older methods. The reliability of the test and the ease with which it can be done makes it possible for every hospital or commercial laboratory to furnish us a quite accurate diagnosis of early pregnancy in the puzzling case. The technique described by Doctor Kaplan is the same as that used by Aschheim and is much more easily executed than the Abderhalden or any other serum test with which I am familiar. The only difficult part of it is having female white mice at three to four weeks of age just at the time when the test is to be made, since immature mice must be used. The observations can be made with or without the aid of a microscope, which is time-saving as a laboratory procedure.

I am glad Doctor Kaplan has brought this test to our attention, and I hope that at least one laboratory in each California city will undertake this test for the profession, as it would no doubt help us in many cases where there is a question of early pregnancy.

✽

LUDWIG A. EMGE, M. D. (2000 Van Ness Avenue, San Francisco).—As far as I can learn from the literature the Aschheim-Zondek test for pregnancy offers the highest percentage of correct diagnoses of any tests so far introduced for the same purpose.

The real value of this test centers in the aid it offers in the diagnosis of pregnancies obscured by tumors and in the diagnosis of extra-uterine gestation. Since the test has proven itself dependable in these groups, its value will be inestimable. The test in itself is simple, and were it not for the constant necessity of having immature mice on hand, could be handled by any good laboratory. The mouse problem complicates matters considerably and confines the test to institutions whose large breeding pens furnish a constant supply of very young mice. In our laboratory at the Stanford women's clinic, Doctor Fluhmann is working at present on a serum modification of this test. His observations are very promising.

Doctor Kaplan's concise report is very gratifying and creditable for bringing this test to the attention of the profession at large.

✽

GERTRUDE MOORE, M. D. (2404 Broadway, Oakland). Doctor Kaplan's paper is indeed timely in bringing to the attention of the medical profession a test of such practical value. Our experience with it for the past year has led us to conclude that it is simple in performance, easy of interpretation, and reasonably reliable. Its accuracy in the hands of most workers compares favorably with that of other laboratory procedures. The statement has been made that the test is impractical because the average pathologist cannot have the necessary immature female mice always at hand, but this difficulty has been met in our laboratory by purchasing these animals from commercial producers at the time that the test is ordered. We have found this plan very satisfactory and urge its trial by those who have looked upon this as an insurmountable obstacle, feeling sure that they will conclude, as we have, that it is the only test ever proposed for the diagnosis of pregnancy which is worthy of serious consideration.

PAINFUL EAR NODULE OF WINKLER AND FOERSTER*

REPORT OF CASES

By GEORGE D. CULVER, M. D.
San Francisco

DISCUSSION by Laurence R. Taussig, M. D., San Francisco; H. J. Templeton, M. D., Oakland; Samuel Ayres, Jr., M. D., Los Angeles.

WINKLER should be given credit for first calling attention to this distinctive pathological condition of the auricle.¹ Foerster deserves credit likewise for having called attention to it without knowledge of Winkler's work, designating it "painful nodular growth of the ear."² The term applied by Winkler, "chondrodermatitis nodularis chronica helix," may impress one as cumbersome. It could well be shortened by leaving out "chronic." Sequeira selected "keratoma auriculare."³ Nothing, however, could be simpler or more direct as a name than "painful ear nodule."

PATHOLOGY

Since attention was called to the condition by Foerster and by Winkler it has been found to be a much more frequent occurrence than was apparently first thought. Many physicians must have seen and treated painful nodules of the ears in the past, without having so classified them. In looking over records antedating the work of Winkler and Foerster I found notes describing fairly definitely the condition, and yet I must have had only a hazy mental picture of it. Since then, while on the outlook for such lesions, I have found them, and have had the opportunity to try different methods of treatment. An instance of a decided failure with a case in 1915, which was treated with temporary success two years later, helped to clarify my idea of the lesion.

Foerster's description is worth repeating: "An ovoid or circular well-defined nodule, varying from three to ten millimeters (usually less than five) in its longest diameter, embedded in the skin or elevated several millimeters above the surface, and in most instances found to be immovable and firmly attached to the cartilage. The nodule is flat-topped or convex, with sloping sides, and it often has a deep or shallow central depression filled in by a more or less adherent crustlike scale. Removal of the scale discloses either an irregularly cupped depression or a pinpoint to pinhead-sized defect or area of ulceration with a red and moist base. The nodules may be skin-colored, grayish, rose red, yellowish or waxy and somewhat translucent, bearing at times a resemblance to epithelioma. A narrow zone of hyperemia is occasionally seen around the lesion and, except for this, the adjacent skin is normal in appearance."⁴

The cutaneous and subcutaneous changes have proved to be inflammatory when the dermatologist's attention is called to the defect, usually chronic to the extent of definite nodular thickening topped by keratotic changes in the epithelium, the keratosis often covering a central point of ulceration. The inflammatory process extends to

and involves the perichondrium and chondrium. Many features of the lesion, which can be seen while it is being removed, as well as the reaction of the area of the ear to treatment, would seem to indicate something fairly definite in the etiology.

Though the location is most frequently that of the region of "Darwin's point" of the ear, which on most ears is the sharply curved posterior superior portion of the border of the helix, an exact replica of the pathologic change can occur on the helix anterior to or below this point, or upon the antihelix, particularly when the antihelix is prominent in its outward projection beyond the border of the helix.

It is not the purpose of this paper to go into the histologic study of painful ear nodes. It would be difficult to more clearly describe the pathologic findings than has been done by Foerster,⁴ Rost,⁵ Roxburgh,⁶ Dubreuilh,⁷ and recently by Mierowsky.⁸ Other points of interest would seem to warrant careful consideration, however.

Not until Foerster's original article was read before the American Dermatological Association was it our habit to segregate instances of painful ear nodules as they were not then recognized as a clinical entity. Since 1918 there have been twenty-six typical instances in the practice of Doctor Montgomery and myself.

REPORT OF CASES*

CASE 1.—Mrs. A. P., female, forty-three, housewife, a former patient with ichthyosis, had a minute tender keratotic topped nodule on the edge of the helix of the right ear at its upper posterior curve (usual location). The tenderness was the main feature. The small keratosis with the soft tissue under it was curetted, and trichloroacetic acid was applied to the base. Healing was perfect, leaving a smooth surface. Two months later there still remained some tenderness, but the skin covering was intact and smooth. There was an interval of two years, during which time the tenderness had persisted, and another nodule had formed. Because of the previous failure to remove the tenderness the soft tissues were cut through and nearly one centimeter of the edge of the cartilage was trimmed off with scissors to a depth of about two millimeters. The removal of the rim of cartilage was prompted by its sharpness and the fact that it felt rough and was tender beyond the limit of the nodule. A cure was apparently obtained. Ten years later, however, tenderness developed posterior to and below the former scar. More of the edge of the cartilage was trimmed off, with resultant freedom from discomfort. There was nothing in the history of this case pointing to the cause of the disturbance.

CASE 2.—J. P., male, forty-two, physician, had for about a year a painful nodular keratotic-topped lesion on the antihelix of the right ear near its bifurcation. It was fairly circular at its base with a diameter of about five millimeters. The lesion was curetted, trichloroacetic acid was applied to the base and it was subsequently irradiated with radium. The wound healed, but the pain and tenderness persisted. Not until a further more radical removal of the scar area, with curettage of the underlying cartilage, did the tenderness disappear.

In this instance the antihelix projected markedly outward beyond the border of the helix, and the painful nodule included the most prominent point. The patient was a sound sleeper and, for as long as he could remember, it had been his habit to sleep on his right side with the affected ear pressed closely to the pillow. His attention was first drawn to the condition by the tenderness.

* Read before the Dermatology and Syphilology Section of the California Medical Association at the Fifty-Eighth Annual Session, May 6-9, 1929.

* A statistical analysis of the twenty-six cases of this article will be appended to the author's reprints.

CASE 3.—W. B., male, sixty, merchant, had a painful nodule of the right ear on the helix anterior to Darwin's point which he thought was caused by a puncture made several months previously to obtain blood for examination. The nodule gave rise to the usual discomfort from lying on a pillow. The patient had serious cardiac trouble with marked circulatory disturbances.

The nodule was reamed out with scissors, the edge of cartilage was trimmed off and the edges of the wound were pulled together with narrow adhesive plaster strips; boric acid powder dressing was applied. Apparently a cure was complete, and there has not been a recurrence.

CASE 4.—J. M., male, sixty-five, physician, had a small keratosis on the top of a small painful nodule situated on the helix of the left ear in the usual location. The nodule was curetted and the base was cauterized with trichloroacetic acid, after which radium was applied. There were four recurrences, three of which were similarly treated with only temporary relief. After removing the cartilaginous edge there was an apparent cure.

There was no clear history of the time of beginning or of the possible causation in this case.

CASE 5.—C. P., male, seventy, retired business man, had a painful nodule on the helix of the left auricle near the tip which had appeared about one month before. It was curetted and cauterized, then irradiated with radium. It was a success for the three years that it was possible to follow the case.

There was no history of possible causative factors.

CASE 6.—B. R., male, only twenty years old, began two years previously to develop painful nodules on both ears. He had, when I saw him, seven such nodules on the right ear, and six on the left. He was not treated. (Figs. 1 and 2.)

He said his ears had been frozen when he was a child. He was subject to chilblains and his ears were deep bluish red.

CASE 7.—J. W., male, fifty-six, railroad employee, came to me because of two painful tender nodules on his left ear, one below and one anterior to a scar over the helix at its upper posterior curve. The scar was the result of excision of a painful nodule one year previously. Both nodules were curetted under novocain anesthesia, the edge of the cartilage beneath each one was trimmed off, and the wound was closed. Healing was uneventful.

There was nothing of interest in the history of this case.

CASE 8.—E. P., male, thirty-six, stockman, had a "pillow" painful nodule of the apex of the helix of the right auricle which had been developing more than a year. The nodule was curetted, the edge of the cartilage underneath was trimmed off, and trichloroacetic acid was applied. The wound healed. Three months later the patient returned, complaining of tenderness anterior to the scar. There was slight crusting over the tender area but no definite nodule. This was similarly treated. Again in three months, then a fourth time after two months, and a fifth time in another two months, he returned, each time with tenderness farther along the edge of the helix anteriorly and below. Altogether nearly three centimeters of the edge of cartilage was trimmed off before all of the tender area was removed.

There was no doubt in this case that the tenderness was in the sharp knifelike edge of the helix of this man's ear.

There was nothing of interest in his history pointing to the development of the original lesion.

CASE 9.—H. W., female, thirty, had for one year a typical painful nodule of the right auricle on the antihelix below its bifurcation. At its top was a small thick circular keratosis about two millimeters in diameter. This was curetted and the base was cauter-



Fig. 1.—Painful nodules on helix and antihelix of right ear. Man twenty years of age.

Fig. 2.—Painful nodules on helix and antihelix of left ear. Man twenty years of age.

ized. One month later, after perfectly smooth healing, the tenderness was still present. The scar area was opened and a circular piece of cartilage about three millimeters in diameter was trimmed out. A month later, because of persistence of tenderness, the procedure was repeated and more of the cartilage was removed. Apparently the third operation was successful, as it has been possible to observe the subsequent result.

In this instance the antihelix was prominent, extending laterally beyond the border of the helix, and the nodule was on the most prominent portion. Close-fitting hats, pulled tightly over the ears, caused marked discomfort. She attributed the lesion to the wearing of a tight-fitting rough straw hat every day for three weeks while traveling in an open automobile one year previously.

CASE 10.—W. B., male, sixty-one, bank employee, had a painful nodule on his left ear, situated in the usual area on the helix, about half a centimeter long. It had been present seven years. There was a history of recurrent crusting. The nodule was topped with a central keratosis. The keratosis covered a small drop-let of yellow pus. Under novocain anesthesia the nodule was slit open along the edge of cartilage. At the base of the pus pocket a small split-pea sized cup-shaped piece of cartilage was found detached from the rim. The helix presented a saw-tooth edge three-quarters of a centimeter in length. This edge was decidedly brittle. About two centimeters of the cartilaginous rim, including the part with the notched edge, was trimmed off with scissors to a depth of about two millimeters. All granulation tissue in the soft parts was curetted, the wound was soaked with alcohol, the edges were pulled together with thin strips of adhesive plaster leaving spaces between, the area was covered with boric acid powder, and a small gauze dressing was applied with adhesive plaster. Within five days healing was complete. This was apparently a success.

No definite history preceding the appearance of the nodule could be obtained.

CASE 11.—C. M., male, about sixty years old, had a painful hyperkeratotic lesion of the right ear in the usual location on the helix. The nodule, which had been present many months, was removed and the edge of the cartilage was trimmed away. Twenty months later the patient again came into the office, this time with a sluggish abscess in the situation of the scar where the cartilage had been removed. This was opened and the pocket, which was filled with creamy-white pus and semisolid necrotic tissue, was emptied. Careful drainage has been continued for

weeks without lessening of the daily discharge. This patient has been under observation nearly six months, during which time there has been progressive loss of cartilaginous substance, giving a noticeable flattening of the upper curved portion of the auricle. He presents a problem which has not yet been solved. The radiographer, pathologist, and bacteriologist have been unable to give any definite aid. The *Staphylococcus albus* has been found in almost pure culture. Constitutional faults of a tangible character, such as possible specific backing or cardiovascular derangements, are negative. Radical surgery may be the only resort, but even that may be of relative value only, depending upon the extent of ear-shell removed. Every means is being tried to save the upper portion of the ear.

Three cases with typical painful nodules in the common location, No. 12, a man fifty-seven years old, with one on the right ear; No. 13, a woman forty-five years old, with one on the right ear; No. 14, a man sixty-one years old, with one on the right ear, in all of which there was no apparent secondary infection, were treated experimentally. This was to prove to myself that the rim of cartilage was of prime consideration in the matter of successful end-result. Under novocain anesthesia the tissues of the nodules over their edges of cartilage were incised with the scissors, and in each instance, without removing any of the soft tissue, the cartilaginous edge was trimmed off a little more extensively than seemed to be indicated, and the wound was closed. In all three cases this procedure was apparently all that was necessary, as healing followed, tenderness disappeared and the areas assumed normal appearances.

Cases 15 to 26 inclusive presented typical painful nodules with little of special interest. They are considered in the statistical analysis.

Doubtful cases with painful ear lesions that are not included in the list, and some of which date back more than twenty years, must have been examples of painful ear nodes. There were twenty-three of these among our older records.

One record, dated 1910, of a man fifty-four years old, a physician, had these notes: "A keratosis on the rim of the left ear-shell that has been present several months. It pains when he lies on it. Lesion curetted and trichloracetic acid applied to base. There is venous stasis of the edge of the earshell so intense as to simulate a Reynaud."

On a record, dated 1906, of a man fifty-three years old, are these notes: "Lesion began two months ago on the margin of the top of the right earshell. It is now a small bean-sized growth, constricted at the base, with rounded sides, and it has a crusted top. It might readily be mistaken for a molluscum contagiosum. On curetting, the lesion proved to be much deeper than I anticipated."

Such records were found among those classified originally under "senile keratoses," later with an omission of the word "senile" for obvious reasons.

SUMMARY OF REPORT

Location of Lesions.—Of the twenty-six patients affected the location was at or near the upper posterior curve of the helix (Darwin's point) in by far the greater number. There were twenty-one who had a single painful nodule in this location. One had a nodule on each ear. One presented two nodules separated by a scar. One other had multiple nodules on both ears. There were sixteen instances in which the right helix was involved and ten with the left. The antihelix was affected four times, singly on the right ear in two instances, and the patient with multiple nodules had them on the helix and antihelix of both right and left ears.

Instances in Women.—The rarity of women patients with painful ear nodules may be only of

passing interest. I have seen three. Would the factor of lessened exposure be brought to mind, and may not this accentuate exposure in the male to rougher elements and to rougher handling? I have thought that possibly a woman's ears are more protected because of the heavier mass of hair. Having the rarity of this condition in women in mind I have sought for other reasons. By comparison women's ears seem to have more subcutaneous tissue over the ridges than is usually found in men's ears, and men's ears seem to have more prominent Darwin points.

Etiologic Factors.—This brings up the question of likely etiologic factors. It is surprising what a small proportion of the cases give any tangible or even conjectural history preceding the occurrence of the nodes, and this in spite of the fact that a patient usually feels quite positive he knows the underlying cause of every swelling or growth.

The location of the node on the most exposed part of the auricle points definitely to irritation as a factor to be considered. And perhaps the commonest and most frequently repeated irritation is that of the pressure of the ear upon the pillow in sleeping. Unfortunately it was determined in only a few instances whether or not the habit of the patient had been to lie on the affected side. A woman's mass of hair may prevent much of the close pressure of the ear against the pillow that a man's closely cut hair does not. Long-continued pressure of the ear against the pillow for hours at a time while the patient is sleeping must in many instances interfere with free circulation of the most exposed area, and so deprive the subjacent cartilage of its nourishment. Now that most women have short hair we may see more frequent instances of painful ear nodes among them. However, even now they wear much more hair than do middle-aged men. It would be unfair to refer to the tight ear-pinching headgear commonly worn by women as an etiologic factor, though it was unquestionably an exciting cause of pain in one instance here reported. Previous freezing of the ears in which chronic circulatory deficiency results is no doubt important, and the auricle, which at best is subject to insufficient nutrition, becomes more faulty in later years, especially when cardiovascular pathology has begun.

It seems to me that circulatory faults in the soft tissues over the helix and antihelix and in the subjacent perichondrium must be of paramount importance in producing an impoverished cartilaginous rim. Roxburgh has given an excellent description of the cartilage pathology.⁶ In Case 10 the cartilaginous changes had progressed to the extent of causing the separation of a small piece of cartilage and definite degeneration of the approximating rim, giving it a saw-toothed appearance. Secondary infection was a factor in this case, but probably not the sole cause of the degeneration.

It is perfectly consistent that recurrences should take place in those instances in which all of the faulty cartilaginous rim is not removed, and it is difficult to determine just how much should be

removed. Also recurrences should be the rule in those patients in whom the same circulatory faults continue or are continually produced. I have gained the impression that most of the patients I have seen have a fairly definite realization of the possibility of a recurrence. They certainly have not been a fault-finding group.

The young chap who had two painful ears, with seven tender nodules on the right ear and six on the left, as shown in the photographs, gave a positive history of having had his ears frozen. He also was subject to pernio of the ears, and when I saw him he had congested bluish red ears. The history he gave was worthy of note as all the occurrences were fresh in his memory. (See Fig. 1 and Fig. 2.)

Some question might arise as to whether or not the nodules in this patient were of the same histologic structure as others reported. No positive proof can be offered as the patient was not treated. The condition was unique in my experience. None of the nodules resembled tophi and the patient was only eighteen years old when they began. Keratotic thickening of the epithelium had begun to form on the tops of some of them, not on all. The tenderness to pressure was marked. Each individual nodule fitted well into the picture presented by other instances at some stage while under observation. I had not any doubt that the nodules were clinical examples of chondrodermatitis nodularis chronica helices. In fact this case seemed to strongly indicate the primary development as occurring in the cartilage.

Treatment.—The character of the nodule in the individual case governs the treatment very largely. The important consideration is as to how best to remove all of the pathologic tissue. Whatever method accomplishes this will prove temporarily successful. It is not difficult to work under novocain anesthesia. All the chronic inflammatory soft tissue process can be easily removed by curetting, if so indicated, or by cutting it away with sharp pointed scissors. The rim of cartilage or area of cartilage underneath should be carefully trimmed away, guessing to the best of one's ability as to what extent. If the wound is cauterized it should be permitted to heal by granulation. No doubt in some instances cauterization is best. I have found it advisable in most of the later cases not to cauterize the wound but to soak it with alcohol and then pull the edges together with fine strips of zinc oxid adhesive plaster, leaving spaces between the strips. Stitching might easily irritate the already faulty area. The whole area can be covered with boric acid powder, and a small gauze dressing fastened on with adhesive plaster. Usually healing is uneventful.

CONCLUSIONS

The painful ear nodule is a distinctive dermatological entity. Pain on pressure is the dominant symptom. The nodule consists of chronic inflammatory changes in the soft tissues.

Frequency.—It must be a much more frequent occurrence than one would judge by the number of reported cases.

History.—The history of the beginning of the lesion is characterized by its indefiniteness. All positive information gained, points to circulatory faults.

Age.—The only significance age has, and it is none the less important, is that the development is at the time of life one would expect degeneration to manifest itself. Only four of the patients were under forty, and there was a fairly even division in the grouping into the fifth, sixth, and seven decades.

Sex.—Evidently not many women have painful ear nodules. There were twenty-three men and only three women in the list of twenty-six. And in the list of case records not used, but which were probably instances of painful ear nodules, there were no women. This would indicate a still greater preponderance among men. A woman may be protected by her mass of hair acting as a cushion about the ears, and possibly by having less prominent Darwinian points and greater padding of soft tissue over the edges of cartilage.

Etiology.—Tangible factors would seem to point to circulatory deficiencies in the immediate locality of the painful nodule. The most common disturbance results from pressure of the auricle upon the pillow in sleeping. The gradual development which takes place over a long time would account for the paucity of the history obtained in instances due to that cause.

Essential Change.—The essential change in the painful ear nodule insofar as treatment is concerned must be the pathologic change that has taken place in the cartilage. This change is quite constant in its location in the most exposed and least well-nourished portion of the auricle, most commonly the edge of the helix at Darwin's point, but also of the antihelix when most exposed to pressure. Over this is formed the nodule of inflammatory soft tissue, with keratotic changes in the epithelium at the top.

Relationship of Time of Disturbance in Soft Tissues and Cartilage.—This point is difficult to determine. The persistence of the tenderness over the cartilaginous structure, even after the affected soft tissue is removed and healing has taken place, would seem to point to the possibility of degeneration of cartilage first. This faulty rim or area of cartilage may act much as would a foreign body or as a sequestrum of bone acts in its irritation of the soft tissues in contact with it. Infective microorganisms must play a purely secondary rôle.

Possibility of Failure in Treatment.—One cannot foretell this possibility of failure. The very nature of the etiologic faults would presuppose such a possibility.

Recurrence.—Recurrence does not always mean faulty treatment or faulty judgment, I hope. We are dealing with a condition which, like a headache, may be a "comeback" under similar circumstances.

Possibility of Epitheliomatous Changes.—There was not a single instance of epitheliomatous degeneration in the list of twenty-six. In most of the cases the patients sought relief fairly early.

However, there were some of extended duration without such an eventuation.

323 Geary Street.

REFERENCES

1. Winkler, M.: Arch. f. Derm., 1915, Vol. cxxi, p. 278.
2. Foerster, Otto H.: Journal of Cutaneous Diseases, 1918, Vol. xxxvi, p. 154.
3. Sequeira, J. H.: Diseases of Skin.
4. Foerster, Otto H.: Archives of Dermatology and Syphilology, 1925, Vol. xi, p. 149.
5. Rost, William W.: 1926, p. 93.
6. Roxburgh, A. C.: British Journal of Dermatology and Syphilis, 1927, Vol. xxxix, p. 112.
7. Dubreuilh, W., et M. Pigeard de Gerbert: Annales de Dermatology et de Syphiligraphie, September 1928.
8. Meirowsky, E.: Dermatologische Wochenschrift, 1929, Vol. lxxxviii, p. 259. Also, Mitchell, J. H.: Archives of Dermatology and Syphilology, 1923, Vol. vii, p. 132. Sutton, Richard L.: Diseases of Skin, seventh edition, p. 742.

DISCUSSION

LAURENCE R. TAUSSIG, M. D. (384 Post Street, San Francisco).—Painful ear nodules are not rare, and it is important to recognize them in order to institute effective treatment. Probably the most striking clinical feature aside from their location is the marked tenderness. I believe that the most important factor in their development is pressure very likely associated, as Culver has pointed out, with circulatory disturbance. Apparently in each case there is a piece of loose cartilage acting as a sequestrum and as such causing the irritation. The failure to find and remove this sequestrum is, in my opinion, the reason for not obtaining a cure. The method of treatment is immaterial. Sharp dissection, curetting with or without subsequent cauterization, cautery excision, or electrothermic methods are all satisfactory providing the sequestrum is removed.

✽

SAMUEL AYRES JR., M. D. (517 Westlake Professional Building, Los Angeles).—There is very little to add to Doctor Culver's clean-cut analysis of this not uncommon malady. I have had one instance in a woman in whom the condition was first noted following the wearing of a close-fitting hat.

In the matter of treatment I have had success with carbon dioxid freezing, and more recently with diathermic coagulation under novocain. I have not been aware of recurrences with these methods.

✽

H. J. TEMPLETON, M. D. (3115 Webster Street, Oakland).—I have one female patient suffering from painful ear nodule. She is twenty-seven years old and works as a mannequin trying on modern tight-fitting hats all day long.

It is my opinion that in her particular case trauma has been the etiologic factor. I have treated all of my cases by rather wide excision with the actual cautery.

The point that Doctor Culver makes in regard to there being a cartilaginous sequestrum present which must be removed is of great practical interest.

✽

DOCTOR CULVER (Closing).—I wish to thank the men who have discussed my paper.

There is one point that would seem to bear a closing remark even though it may be considered a repetition. The faulty cartilaginous edge is not necessarily free, and it may not give any evidence when it is laid bare that it is pathologic. One has to take it for granted that it is so and use his best judgment as to how much of it should be removed.

Since reading the paper I have seen a boy twelve years of age with a painful nodule of three years' duration on the right ear in the usual location, typical even to the hyperkeratotic top. One was developing also on the left ear, still presenting a smooth surface, and only slightly tender. There was an absence of any history of trauma. Trauma does not seem to be a necessary factor in its causation.

THE LURE OF MEDICAL HISTORY

AN OLD BOOK BY BENJAMIN RUSH

By GILBERT R. OWEN, M. D.
Los Angeles

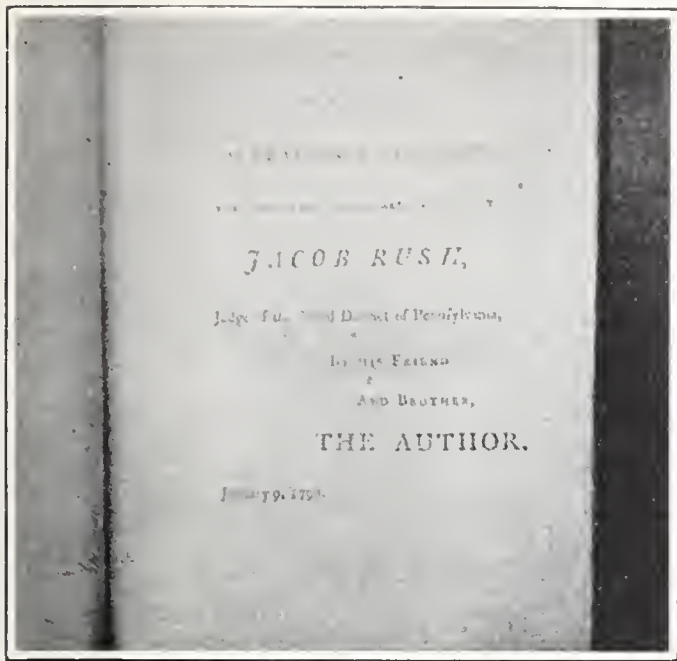
OF Benjamin Rush much has been written, and, as a signer of the Declaration, he is probably one of the best known among American physicians. Historically, how little a century means; yet who among us would appreciate his pre-Pasteurian titles of the "American Sydenham" or the "Pennsylvania Hippocrates."

The book of which we write is a delightful little volume bound in the conventional calf of the period, and from the press of Thomas and Samuel, descendants of the famous William Bradford, who opened the first American press; and the little volume is our excuse for these sketchy comments on Benjamin Rush.

"Essays—Literary, Moral and Philosophical" is the rather depressing title of the volume. It is charmingly and quaintly dedicated: "As a record of fraternal affection, the following essays are inscribed to Jacob Rush, Judge of the Third District of Pennsylvania, by his friend and brother, the author. January 9, 1798." The essays embodied are of the most protean character, and are a fair index of the feeling of civic responsibility common among prominent physicians in Colonial days. Most of the essays had appeared in the *Columbian Magazine*. They won for him caustic comment from Holmes. Garrison terms him "A typical eighteenth century theorist, and a man whose social propagandism against war, slavery, alcoholism, and the death penalty was perhaps not entirely dissociated from a personal interest in increasing his practice."

As a "cure" for the tobacco habit may be read the opening paragraph of "Observations Upon the Influence of the Habitual Use of Tobacco Upon Health, Morals and Property." It is reminiscent of the pictures of the alcoholically induced, hob-nail-liver which were in the textbooks of our youth. We are sure that no nicotin addict will care to continue the regrettable habit after having read it: "Were it possible for a being who had resided upon our globe to visit the inhabitants of a planet where reason governed, and to tell them that a vile weed was in general use among the inhabitants of the globe it had left which afforded no nourishment—that this weed was cultivated with immense care, that it was an important article of commerce, that the want of it produced real misery, that its taste was extremely nauseous, that it was unfriendly to health and morals, and that its use was attended with considerable loss of time and property, the account would be thought incredible, and the author of it would probably be excluded from society for relating a story of so improbable a nature. In no one view is it possible to contemplate the creature man in a more absurd and ridiculous light than in his attachment to Tobacco."

There are some amusing highlights in his homily, a sprinkling of wisdom; but nothing of therapeutic value. Let us read as we run.



Facsimile of title page.

"... the progress in the decay of the sensibility of the nose to the stimulus of snuff is analogous to the decay of the sensibility of the stomach, to the stimulus of spirituous liquors. It feels for awhile the action of Rappee; next it requires Scotch snuff, afterward Irish Blackguard—and finally it is affected only by a composition of tobacco and ground glass. This mixture is to the nose what cayenne pepper and Jamaica spirits are to the stomachs of habitual dram drinkers."

"A citizen of Philadelphia lost all of his teeth by drawing the hot smoke of Tobacco into his mouth by means of a short pipe. . . . I once lost a young man of 17 years of age, of a pulmonary consumption, whose disorder was brought on by the intemperate use of segars."

He denies the virtue of tobacco as a preservative against contagion, a lay superstition that exists even to this day. Recent excavations of old plague burial pits in London disclosed great quantities of clay pipes used by the "buriers of the dead" for this purpose.

"Colonel Burr informed me that the greatest complaints of dissatisfaction and suffering that he heard among the soldiers that accompanied General Arnold in his march from Boston to Quebec through the wilderness in the year 1775 were from the want of Tobacco. This was the more remarkable, as they were so destitute of provisions as to be obliged to kill and eat their dogs."

"It has been further said that chewing and smoking Tobacco assist in the intellectual operations. . . . Mr. Pope recommends a trotting horse for the same purpose." (His only flash of wit. Probably inadvertent!) . . . "I suspect that Tobacco is often used rather to supply the want of ideas than to collect or excite them."

In review . . . "we are assured that nothing exists in vain. Poison is a relative term. . . . What animal except man will take Tobacco into its mouth? Horses, cows, sheep, cats, dogs, and even hogs refuse to take it. . . . Modern travel-

lers have at last discovered that it constitutes the food of a solitary and filthy wild beast, well known in the deserts of Africa, by the name of Rock Goat."

The "Remarkable Circumstances in the Constitution and Life of Ann Woods," together with the "Life of Edward Drinker," seems to have much to do with his essay on "Old Age," which had previously appeared in his *Inquiries*, Vol. 2. There were still murmurings of witches in Salem, even as today they are still "hexing" in Pennsylvania. The memory of Nicholas Culpeper was yet fresh, if not fragrant. Laennec's holly wands were known as "papistic contrivances." Belief in the supernatural and the extraordinary, tintured Rush's environment. One swallow made many a summer, and Ann's biological eccentricities, doubtless apochryphal, became physiological realities.

Ann's history runs thus: She first menstruated at the age of 19 or 20. Having lost three children soon after weaning she suckled subsequent children, six in number, throughout entire pregnancies, suckling one until its fifth year. She had a child by her second husband in her sixtieth year. Except for eleven-month intermissions during her pregnancies, she menstruated until her eightieth year, suffering subsequently headaches because of her senescent menopause. She was, at the time Rush met her, he states in the "Old Age" essay, in her one hundredth year. In the "Ann Woods" essay, her ninety-sixth.

From Ann's testimony he reaches the following conclusions: "That there is a great latitude in the time when the menses cease. It is more common for them, in their eccentricities, to disappear at the usual time and to return in extreme old age." "There is a great latitude in the time in which women bear children. Many children are born between 50 and 60, but very few, I believe, beyond sixty." "That child-bearing and suckling children, . . . gray hair in the fifth decade," and "hard work combined with temperate habits, . . . do not materially affect longevity. . . ."

Many of his observations on old age are startlingly modern. In his "Eulogium" on Dr. William Cullen, whom he appears to have revered above all men, he says: "I have been informed that he yielded at last to the passion for rural improvement, which is common to all men, and amused himself in the evening of his life by cultivating a farm."

Warthin, on the same subject, in his Carpenter lecture, delivered to the New York Academy of Medicine in 1928, says: "Creative mechanical work of some kind offers one of the best outlets to the old man's restlessness; and of all the occupations that may offer, that of gardening, of growing and planting . . . is the very best form of exercise and avocation adapted to the needs of the aged individual. There is also a very definite psychological relationship shown in the return of the old man to the soil."

In his "Life and Death of Edward Drinker," Rush writes: "But it is a fact well worth attending to, that old age, instead of diminishing, always increases the desire for knowledge. It must add some consolation to those who expect to be old

to discover that the infirmities to which the decays of nature expose the human body are rendered more tolerable by the enjoyments that are to be derived from the appetite for sensual and intellectual food." Warthin again says: "Since the mental powers are preserved longer than any other function in senescence, happy is that man who comes into his old age with the capacity for intellectual pleasures fully developed, not in one line alone, but in many—in literature, art, music, and science."

Rush says: "Few persons appear to die of old age. Some one of the diseases which have been mentioned generally cuts the last thread of life." Warthin's monograph states: "Such a biological normal death is rarely achieved by man. He usually succumbs to influences of environment, or dies prematurely because of inherent defects in his organism."

1800 West Sixth Street.

CLINICAL NOTES AND CASE REPORTS

CONGENITAL CYSTIC DISEASE OF THE LUNG*

REPORT OF CASE

By RULON S. TILLOTSON, M. D.
Woodland

WITH very few exceptions the only cases of congenital cystic disease of the lung that have been reported have been found at autopsy or following a surgical operation on the lung. For this reason, I feel somewhat hesitant in reporting this particular case which was found in an apparently healthy individual. However, the evidence shown in the case presented seems to justify the diagnosis.

The first clinical report on congenital cystic disease of the lung was made in 1859 by Meyer¹ in Germany. Krontz,² from the pathological department of Johns Hopkins University, reported a case of this disease in 1925. In reviewing the literature to that time he found no American cases had been reported. The latter author collected 108 cases, most of them reported by the Germans, some by the English, French, and Italians. Miller³ in Baltimore, in 1925, and Eloesser⁴ in San Francisco, in 1928, have reported cases of this disease.

In the series of 108 cases reviewed by Krontz the age at which these cases were found at autopsy extended from premature stillborn infants to old age. The condition was apparently not a direct or a contributing cause of death in many of the cases reviewed. In six cases it was but an accidental finding at autopsy. An Associated tuberculosis was reported in but five of the total number of cases.

In discussing the confusion in the terminology on the literature on this condition, Krontz states: "The following terms are encountered and used synonymously: fetal bronchiectasis; congenital

cyst formation of the lung; atelectatic bronchiectasis; congenital bronchiectasis; honeycomb lung; and others."

REPORT OF CASE

P. M., age twenty, referred to San Francisco Hospital by an outside physician, with a diagnosis of pulmonary tuberculosis. Admitted on the service of Dr. W. R. P. Clark, April 15, 1929.

Present Illness.—One week preceding admission the patient first noticed a dry cough, not frequent, principally nocturnal. Four days preceding admission, during a mild spell of coughing, he brought up about a tablespoonful of bright liquid blood. There was no recurrence of the hemoptysis up to the time of his admission.

Family History.—No family history or association with tuberculosis. Father and mother are living and well. Two brothers and one sister are living and well; none are dead.

Past Medical History.—Born in Italy, came to this country at nine years of age. Shortly following his arrival in the United States he had chickenpox; made good recovery. With the exception of this one childhood disease, he never remembers being ill. Was never told by his parents of any illness he suffered during infancy or early childhood. No history of repeated head colds or chronic nasal discharge. He has never had a cough except as referred to in present illness, no sputum, no night sweats. There is no past medical history referable to cardiovascular, gastrointestinal, or genito-urinary systems. No history of venereal infection. No history of foreign body aspiration.

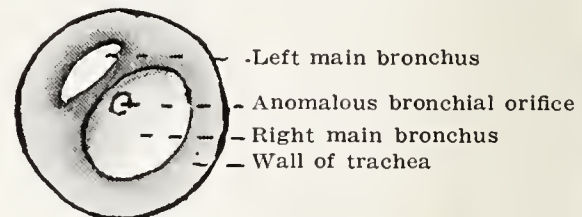


Fig. 1.—Diagram of region of bifurcation of trachea, as seen through the bronchoscope.

He has been employed as a boxmaker the past four years and has always been able to do hard work. His general health was considered very good until he spat up the blood four days prior to admission. Six months ago, while stripped to the waist for a friendly boxing encounter, he noticed for the first time that the left side of his chest was smaller than the right. Enjoys boxing and engages in this sport occasionally.

Physical Examination.—The following physical findings are mentioned among others by Doctor Clark:

"Patient appears somewhat undernourished. The left shoulder is lower than the right and there is definite flattening of the trapezius muscle on this side. There is a left scoliosis of the spine. The finger nails are curved but the fingers are not clubbed. The respiratory movements are restricted on the left. The heart is markedly displaced to the left. The right border of the heart is to the left of the sternum. The percussion note is slightly impaired in the upper portion of the left lung and merges into the area of cardiac dullness below. There is more or less dullness over left lung posteriorly. Tactile fremitus is present over both sides, is increased at left top and decidedly diminished at left base. No cardiac murmurs are heard." Examination of the head, including the sinuses, was negative. The abdomen and extremities were negative. Sputum examination negative for tubercle bacillus on three examinations. Request was made that further examinations be made. Urine negative. Blood Wassermann negative. Temperature normal.

X-Ray Examination.—An x-ray of the chest was taken April 17, 1929 (Fig. 1). The following report was made by Dr. John M. Rehfish:

"The left chest is much contracted in all its diameters. The mediastinum has been badly displaced to-

*From the Otolaryngological Department of the San Francisco Hospital, Stanford University Service.

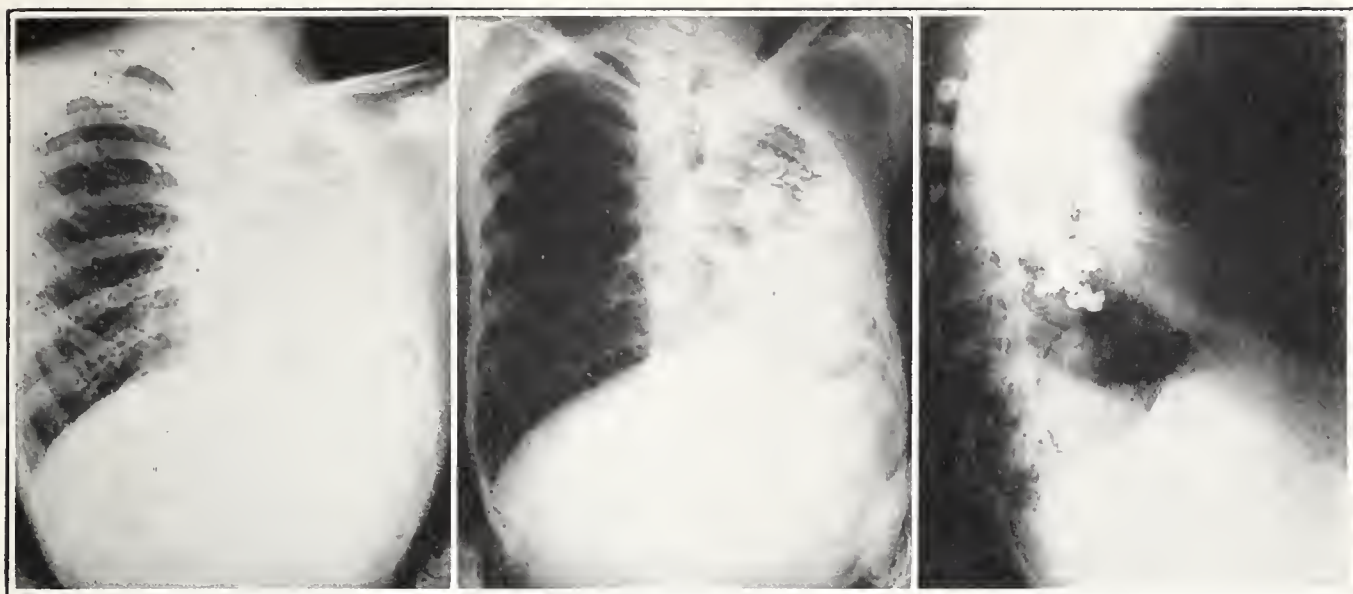


Fig. 2.—Film taken April 17, 1929, shows complete atelectasis of left lung, trachea is pulled to the left, heart and mediastinum are markedly displaced to left.

Fig. 3.—Film taken May 21, 1929, following bronchoscopy and lipiodol injection shows cystic dilatation of bronchi in left atelectatic lung.

Fig. 4.—Film taken May 21, 1929, shows cystic dilatation of bronchi in lateral view.

ward the left. The lung field on the left is quite diffusely opaque with no parenchymatous detail to be made out. The right border of the heart lies to the left of the left border of the vertebral column. The right lung field presents no definite evidence of pathology and the hilum of the right lung has completely disappeared behind the vertebral column. This is, of course, a most unusual picture and while a fibrosis may account for similar findings, this would be unusual in a patient at this age without involvement of the opposite side. All in all, the x-ray would seem to justify a diagnosis of bronchial stenosis with complete atelectasis of the left lung."

The following comment was made by Dr. Charles D. Fletcher:

"The x-ray shows a complete atelectasis of the left lung field which may be due either to an intense fibrosis or a bronchial stenosis. The absence of pathology on the right makes one feel that it is not tuberculosis because of the marked involvement of the left side. There is no history of repeated attacks of pneumonia to warrant the diagnosis of chronic pneumonitis (Corrigan's sclerosis). A congenital atelectasis or bronchial stenosis are also possibilities. Bronchoscopic examination is suggested."

Bronchoscopic Examination.—A bronchoscopy was not arranged until the following month.

On May 21, 1929, I bronchoscoped the patient with the assistance of Dr. J. L. Ash. The bronchoscope was passed without difficulty. The tracheal rings were identified, the mucosa was of normal appearance. No free secretion was encountered on passing the bronchoscope to the carina or septum between the two main bronchi. The carina, instead of occupying the normal anteroposterior position (vertical in appearance, as viewed through bronchoscope with patient lying on back), occupied an oblique position, as shown in Fig. 2. The relative diameter of the upper or left main bronchial orifice was much smaller than that of the right and presented in its upper portion a slightly granular appearance, not reddened or bleeding on touching as would suggest true granulation tissue. The orifice of the left main bronchus was too small to admit the tip of the seven millimeter bronchoscope. No free secretion was noted coming from this orifice. On passing the bronchoscope along the right main bronchus a small, apparently anomalous, bronchial orifice was noted in its left lateral wall at less than one centimeter from the carina. On subsequent lipiodol injection this appeared from the x-ray film to communicate with the left main bronchus. The upper lobe bronchial orifice on the right and the

orifices of the middle and lower lobe bronchi on the right were identified and appeared normal. No free secretion was encountered in the right main bronchus. No granulations or ulcerations of the mucosa were noted. A No. 12 rubber catheter was introduced through the bronchoscope to the left main bronchus after which the bronchoscope was withdrawn and the catheter left in situ. The patient was moved to the fluoroscopic room and lipiodol was introduced through the catheter with a Luer syringe, the distribution of the oil being observed under the fluoroscope. X-ray plates, taken immediately following in the anteroposterior and lateral planes, are shown in Figs. 3 and 4."

The following report on the x-ray plates was given by Doctor Rehfish:

"There is a very satisfactory lipiodol injection of the posterior portion of the collapsed left lung. The lipiodol is gathered in small puddle-like masses demonstrating the presence of a grapelike cluster of bronchial dilatations. In view of the total absence of clinical evidence pointing toward true bronchiectasis, the possibility of a cystic dilation of the bronchi must be strongly considered."

On June 8, 1929, bronchoscopy was repeated. The appearance of the tracheobronchial tree, open to inspection through the bronchoscope, was the same as at examination May 21, 1929, with the exception of the fact that the granular contour of the upper portion of the left main bronchial orifice was not noted in this examination. Bismuth subcarbonate was insufflated through the bronchoscope with a Clerf bronchoscopic atomizer in the region of the carina and left main bronchus. An x-ray of the chest was taken immediately following in an effort to better demonstrate the anomaly of structures in this neighborhood. The absence of contrast in the shadow cast by the bismuth and the marked cloudiness of the diseased left lung prevented any satisfactory conclusion being drawn from the x-ray plate.

COMMENT

The anomaly in size and arrangement of the bronchial orifices on the left (open to inspection through the bronchoscope) is suggestive of a congenital rather than an acquired lesion. The absence of secretion on bronchoscopic examination and the negative history of expectoration of secretion are against an acquired bronchiectasis. The absolutely negative history of diseases usually

elicited in the past medical history of acquired bronchiectasis cases is against the acquired form of this disease.

The term "cystic disease of the lung" may be objected to on the basis of the fact that the dilated bronchi in this case appear to be air-containing rather than filled with fluid or semi-solid material which the term "cystic" may imply. To those objecting to the term "congenital cystic" disease of the lung in this case the synonyms atelectatic bronchiectasis or congenital bronchiectasis may seem to better describe the pathologic process.

At this time two months have elapsed since the patient entered the hospital. He states he feels well and as strong as usual. His admission weight was 124 pounds; his present weight is 130 pounds, which he regards as normal. He had no fever at the time of his admission and has been fever free since. The slight cough which he had on admission cleared up shortly after his entrance to the hospital. There has been no hemoptysis since the attack described in his present illness.

Reference to the fact that he enjoys boxing and frequently engages in this sport has been made in the history. Could trauma of the chest, such as might result from engaging in this sport, have contributed to the hemoptysis in the presence of such an underlying condition of the lung? No direct history of a traumatic basis for the hemoptysis could be obtained. It is believed that the evidence presented in this case is sufficient to warrant the diagnosis of congenital cystic disease of the lung.

San Francisco Hospital.

REFERENCES

- Meyer, H.: Ueber Angeborene Blasige Missbildung der Lungen, Nebst Cinigen Bemerkungen Neber Cyanose aus Lungenleiden, Virchows Arch. 1859-16, 78.
- Krontz, Amos R.: Congenital Cysts of the Lung, Bull. Johns Hopkins Hosp., 1925-37, 340.
- Miller, Robert T.: Congenital Cystic Lung, Arch. Surg., 1926-12, 392.
- Eloesser, L.: Congenital Cystic Disease of the Lung, Surg. Clin. North America, 1928-8, 361.

A CLOSED METHOD FOR DRAINING ACUTE EMPYEMA

By J. E. STRODE, M. D.
Honolulu, T. H.

NO priority whatever is claimed for the following method of treating empyema. The originator of the method is not known to me nor have I been able to find a description of this technique in available literature. It was used during the recent war and proved so efficient at that time, and since, in civilian practice that a more widespread dissemination of its use would seem advisable.

Under intercostal block anesthesia one inch of the ninth rib in the postaxillary line is resected. With the index finger inserted into the pleural cavity as a guide, a trocar large enough to admit a No. 16 F. catheter is introduced through the intercostal space that lies in closest proximity to

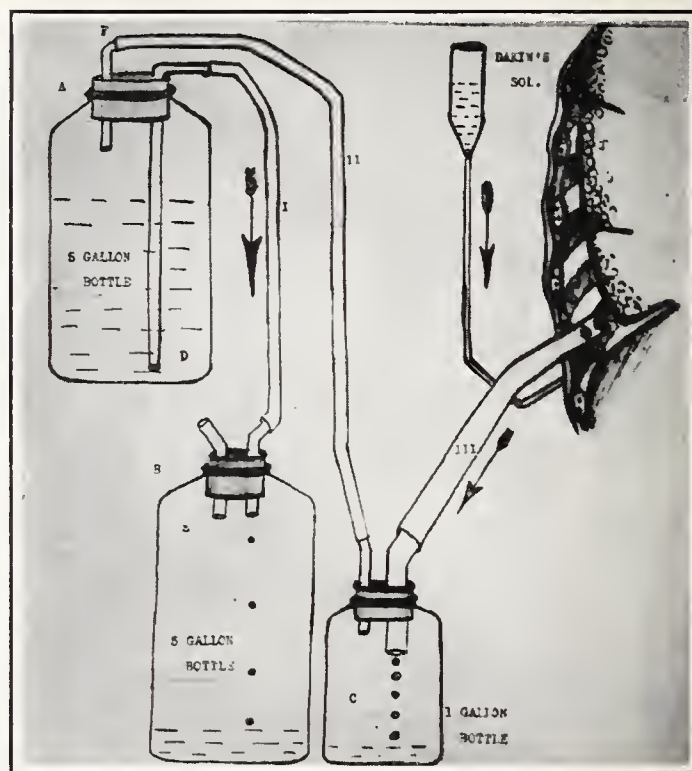


Fig. 1.—Diagram of apparatus used.

the upper surface of the diaphragm. The catheter is threaded into the pleural cavity and held in place by a single silkworm gut suture after removing the trocar. A firm rubber tube with a diameter of ten millimeters is retained in the primary thoracotomy opening by two silkworm gut sutures. Connections are then made, as shown in the diagram. (See Fig. 1.)

To start the apparatus to functioning, one blows into the glass tubing F until water begins to siphon from bottle A to bottle B. The attachment is then replaced. As water flows from bottle A to B negative pressure is produced in bottle A which is transmitted to the pleural space via bottle C and tubing III. This sucks out the pleural exudate which collects in bottle C, at the same time keeping the lung expanded.

Irrigation with Dakin's solution, either continuously or preferably at four to eight-hour intervals, is carried out by way of the catheter.

When the water in bottle A has been nearly exhausted a clamp is placed on tubings I and II, the stoppers withdrawn, and bottles A and B exchanged. To cleanse bottle C, clamp tubings II and III.

The amount of negative pressure obtained will vary in proportion to the distance the end of tubing D is above the end of tubing E and to a less extent on the height of the water level in bottle A. For all practical purposes if the distance between the bottom of bottles A and B is kept at eighteen inches sufficient negative pressure will be obtained and will be in the neighborhood of twenty millimeters of mercury.

Needless to say the success, of the apparatus depends upon keeping the system relatively airtight. A small amount of sterile gauze is placed over the incision and the area sealed over with

several layers of adhesive plaster. When working efficiently the rate of flow into bottle B will be from thirty to fifty drops per minute.

There is no age limit to the applicability of the method, though babies and children require more surveillance. Where this method of treatment has been instituted at the proper period the average length of time necessary for its employment has been two weeks. After removing the tubes the incision soon heals and x-rays show little, if any, lung collapse.

With this method, by which a considerable amount of negative pressure is continuously exerted on the lung, there is a greater likelihood of the lung expanding where there has been thickening of the visceral pleura than when simple airtight drainage is used.

I also feel there is a distinct advantage over the introduction of intercostal drains, as the possibility of compression of the tube and lessening of its caliber between the ribs is not a factor when a portion of the rib has been resected. The amount of additional shock when local anesthesia is used is almost negligible.

While the apparatus may appear a bit cumbersome, in reality it is simple to assemble, easily procurable, works efficiently, and is comfortable for the patient.

401 South Beretania Street.

TUMORS OF THE CAROTID BODY*

REPORT OF CASE

By W. H. BUDGE, M. D.
Ogden, Utah

THE carotid body is not a new discovery. Its existence has been known since 1743, when von Holler found it and described its relations and macroscopic appearance. In 1862, one hundred and nineteen years later, Luschka noted its constant occurrence and made the first microscopic examination. It appears that Riegner, in 1880, was the first to remove a tumor of this gland. He called attention to the malignant tendency of such growths. Since 1891 up to the present time about one hundred cases have been reported by different surgeons, but not more than three have been reported by any one surgeon. In spite of the number of cases reported the clinical symptomatology, the etiology, and histologic characteristics are still more or less obscure.

THE CAROTID BODY

Nomenclature.—The exact nature of the gland or organ under discussion has been so uncertain that several different names have been given it, such as: intercarotid ganglion, Luschka's gland, intercarotid arterial glomerulus, carotid ganglion, and carotid body.

Anatomy.—When von Holler stated over one hundred and eighty years ago that he found a nodule about the size of a kernel of wheat at the

bifurcation of the common carotid artery, that it was set in the sympathetic nerve plexus around the artery and almost fused with its wall, and called it the intercarotid ganglion because he regarded it as a nerve structure. He little knew that at the present time his views, with a few modifications, would be confirmed.

Luschka's microscopic findings also have been substantiated of large cells in clusters surrounded by thin capillaries and sympathetic nerve fibers, which suggested to him their analogy to the adrenal bodies, the anterior lobe of the pituitary and other ductless glands. There has been, however, some disagreement among modern histologists in regard to the character of the cells and blood vessels, and the question of their close relationship with the nerve fibers.

The blood is supplied by three or four small arteries that enter at its lower pole. A corresponding number of veins leave at its upper pole. Its nerves are numerous and come from several sources among which are: the vagus, sympathetic, hypoglossal, and the glossopharyngeal.

Histology.—Dr. James Dawson reports the sections show irregularly arranged clumps and rows of cells occupying the interspaces within a close capillary network. The cells are fairly granular and when treated with chromic acid take the yellow color of "chromaffin" cells. The specific cells and endothelium probably share in the tumor process.

Physiology.—The function of the carotid body is not known. Experimentally its juice has been known to kill a rabbit in a few minutes, and small doses will depress the vascular system, which is just the opposite from the action of adrenalin. Bilateral removal of the organ has produced glycosuria and fatal cachexia. Undoubtedly the carotid belongs to the sympathetic ganglia.

Symptoms.—The symptoms are pressure symptoms such as: bruit and thrill, tinnitus aurium, harshness, cough and vocal cord paralysis from involvement of the sympathetics, dysphagia, and dysphonia.

Diagnosis.—The growth is almost always unilateral and occurs with equal frequency on the two sides of the neck and in male and female subjects. The following points are important in diagnosis: position at carotid bifurcation, smooth oval outline, mobility from side to side but not up and down, transmitted pulsations from carotid, slow growth (often many years), absence of any pain or tenderness with bulging of the pharyngeal wall.

The differential diagnosis should include consideration of the possibility of enlarged lymph glands, *i. e.*, cervical adenitis, gland metastasis as in carcinoma, Hodgkin's disease, bronchial cyst, syphilitic enlargement of glands, gummata, tuberculous glands, dermoids, and aneurysm.

Pathology.—Tumors of the carotid may be benign or malignant. The benign tumors are simple hyperplasia, adenoma, and angioma. The malig-

* Read before the Weber County Medical Society, September, 1926.

nant tumors have been variously diagnosed as perithelioma, endothelioma, epithelioma, epithelial angiosarcoma, and carcinoma. These tumors vary in size from an almond to a goose egg, are usually oval in shape, smooth, and occasionally lobulated. They are usually dark red in color on section, but may be almost white or yellow.

Operative Difficulties.—The growth commonly involves both internal and external carotid arteries and frequently the vagus and cervical sympathetic nerves are so intimately bound up in the tumor that they necessarily have to be sacrificed in its removal. In the fifty cases collected by Schmidt, forty-five patients had operations with twenty-eight cures, fourteen deaths, and three recurrences. Both vagus and sympathetic nerves were cut three times, and the vagus alone three times. In most of the patients both carotids were tied, in three patients only the external carotid was tied. Of the fourteen deaths two patients had bronchial pneumonia following section of the vagus, two died of hemorrhage, four had hemiplegia (evidently from tying the internal carotids), one died of sepsis, and five of various other causes.

Results.—The results in the cases operated on up to date have not been very creditable to the surgeon. The mortality is high. Laryngeal and other disturbances of a permanent nature should make one hesitate before operating. Among the serious complications that have resulted are hemiplegia, aphasia, paralysis of the facial and the hypoglossal nerves. If these tumors are to be treated successfully they should be operated on early before they have become so intimately attached to the carotids that ligation of the carotids is necessary for their removal. The surgeon will rarely see them in this state and will still more rarely make a correct diagnosis.

REPORT OF CASE

This patient, E. F. M., age thirty-eight, came to me June 9, 1926, giving a history dating back ten to twelve years. At that time he first noticed a small tumor mass in the left side of his neck. This was accompanied by the following symptoms, which were gradually becoming more pronounced: burning sensation on the left side of the neck, anterior to the ear and involving the side of the jaw, black spots before the eyes, vertigo, slight stiffness of the neck, occasional ringing of the ears, sensation of throbbing especially when he had a cold, and a dull aching. Sharp shooting pains were present during the last month before coming under observation.

The patient was a well-nourished man, weight 190 pounds. Family history negative. Past history and physical examination negative, aside from the tumor mass in the neck. On the left side of the neck, behind and below the angle of the jaw, lying deep in the carotid triangle, was a smooth, hard, nontender and nonfluctuating mass about the size of a hen's egg, movable laterally but not perpendicularly, extending from about the bifurcation of the common carotid artery, well up toward the base of the skull, behind the sternomastoid muscle.

A removal operation was done June 19, 1926. A slightly curved incision was made in the crease of the neck, on the left side overlying the tumor. Superficial tissues were cut through. Much bleeding was

encountered, due to established collateral circulation. The sternomastoid muscle was retracted laterally. The tumor which was in a sheath was then exposed, lying underneath and partly medial to the sternomastoid. It was found to be very hard, adherent, deep red in color, the shape and size of a hen's egg and extending well up toward the base of the skull. The distal end was in the bifurcation of the common carotid artery and the external carotid was seen running over the lateral surface of the tumor. The finger was introduced under the proximal end of the tumor. This was difficult, due to the close proximity of the tumor and the base of the skull. The tumor was raised slightly and gently while the external carotid was dissected off the external surface with the finger of the other hand. The internal carotid was dissected off likewise and the tumor was completely removed. Considerable hemorrhage occurred from the posterior facial vein, which is a branch of the external jugular, and which was torn off just as the tumor was removed. This was controlled by hot packs and later ligation. After removal the internal and external carotids could be identified and were found to be pulsating normally. No nerves were cut, except superficial branches, all vessels were tied and a narrow iodoform gauze pack was put in. Fine catgut was used for superficial tissues, and silk for the skin. The pack was removed the following day.

Pathologic Report.—Made by Dr. E. C. Barrett, pathologist to the Thomas D. Dee Memorial Hospital: Small hen's egg sized tumor mass which histologically shows that both the specific cells and the endothelium participated in the process, yielding a more or less homogeneous mass involving the entire gland.

The stroma was infiltrated with tumor cells, which are distinctly polyhedral and granular. They are arranged for the most part in compact groups without lumen, supported by abundant capillaries.

There are larger cell groups with a tendency to degeneration and hemorrhage into the central cavity. Occasional knobs of hyaline-like material are seen in the stroma, often bulging into capillaries.

Diagnosis.—Endothelioma of carotid.

Subsequent Course.—The next morning, following the operation, I visited the patient and talked with him. The same afternoon the nurses noticed that he could talk only by whispering. This whispering continued until November 14, 1926, when upon arising he suddenly spoke aloud. He was very surprised and came to my office and talked to me. The following day his voice left; and he continued to whisper until September 7, 1928, when suddenly, while directing some construction work, his voice returned. He reported to me again on October 1, 1928, and his voice was perfectly clear. He speaks with as much ease, in both high and low tones, as any normal individual. At the present time, thirty-two months after operation, the patient is perfectly well and there are no signs of recurrence. This speech impairment undoubtedly was mental.

SUMMARY

1. A new case of carotid gland tumor is reported.
2. The extreme rarity of a tumor of the carotid body is noted.
3. Physical findings in case reported, which were definite, fit in perfectly with those found previously and described by other surgeons having similar cases, but which were unknown to me.
4. Diagnosis was not made before operation.
5. Results: Temporary loss of voice; otherwise patient is well.

309 First National Bank Building.

BEDSIDE MEDICINE FOR BEDSIDE DOCTORS

An open forum for brief discussions of the workaday problems of the bedside doctor. Suggestions for subjects for discussion invited.

OBSCURE GALL-BLADDER DISEASE

STANLEY H. MENTZER, SAN FRANCISCO.—The most important single factor in the diagnosis of obscure gall-bladder disease is the history. Upon it may rest the diagnosis, the proper course of treatment, and the prognosis. It may nullify laboratory data and deny x-ray findings, and it may demand surgery or refuse it when other features of the case seem to warrant otherwise.

There are three main diagnostic features that deserve detailed study in the history of obscure biliary disturbance. Upon them rest the major factors in the differential diagnosis. They are: pain, qualitative food distress, and gas.

The first of these, pain, is often denied by the patient. She will insist she never has any pain. Her trouble is simply "distress," a heavy sensation indefinitely localized in the upper abdomen. It may not radiate nor localize at any time. It does not double her up in agony nor is it usually severe enough to warrant medication for its relief. It is simply a distress of an ill-defined nature. It is related to food, however, and this may be quite characteristic. When there is distress it is present an hour or an hour and a half after certain foods. Occasionally it is relieved by a little additional food, but not with the regularity and definiteness that food affords an ulcer pain. It does not occur with any regularity and, while there may be long periods of relief, there is not the characteristic intermittency of the ulcer syndrome.

The patient often ascribes her distress to some food that probably was not the offender, for she may not have noted any particular kind of food that brings on the trouble. Careful inquiry into the latter, however, will usually reveal a characteristic type of food that is responsible. But this may have been so indefinite that the patient has not been aware of it. Soda is occasionally taken with more or less relief, but never with the regularity or success that the ulcer patient enjoys. The distress is limited, disappearing in the course of an hour or so, or it may occasionally completely vanish after the patient has belched. Atropin in 1/75 grain doses is the best alleviator of it.

The qualitative food distress that these patients suffer is not characteristic. There are usually suggestive features that, when studied in detail, give a clue to the trouble, but the classical distress from eating fats, sweets, and sour food is absent. The interpretation of qualitative food distress is so much abused by the student that it is probable we are often misled by our own histories. The patient who is unable to eat a fried pork chop may say in the next breath that she enjoys fried potatoes without distress, or vice versa. The man

who cannot eat a salad with mayonnaise or Louie dressing is able to handle fresh tomatoes in abundance. Or the woman who cannot tolerate cake or pastry is able to eat candy joyously. These, of course, are not instances of qualitative food distress and yet they are cited as such frequently.

I think it may safely be said that the patient with an early or obscure gall-bladder lesion will complain of one type of food rather than all three. And a carefully taken history will show that this patient is really sensitive to either fats, sweets, or sour foods. She is often able to eat a food that at one time distressed her and now does not, but careful questioning will prove that a large quantity of that food will bring back her trouble. Indeed, this is one of the most characteristic features of early gall-bladder disease. The patient may be able to eat a heterogeneous mixture of many kinds of food, including her regularly "intolerant" food, but this is possible only if small quantities are eaten at a time. It is the large meal or the large quantity of one type of food that induces distress in these patients. How often we hear that the patient can eat a small quantity of fats, sweets or sour foods, but that the trouble follows when quantities of a certain food that are ordinarily normal initiate the distress. And in terms of pathologic physiology, is this not just what we should expect? The slightly diseased gall bladder is able to function partially; it concentrates bile somewhat, and it is able mechanically to empty partially. Why should it not be able to partially handle the burden thrust upon it? But to expect that disabled organ to function as a normal one is unreasonable, is it not? In thinking thus, in terms of pathology, the course to be followed in treatment is obvious. These gall bladders should not be treated surgically. They are partially functioning organs and can do a reasonable amount of work. The task put upon them should be limited, but they should not be completely out of use as either a cholecystostomy or cholecystectomy will do. And this holds true for the partially functioning gall bladder, whether it is full of stones or not. Gall bladders that contain stones yet function partially will invariably be essentially noninflammatory. As secondary infection occurs, clinical symptoms of distress are increased. Surgical treatment may then be considered in the therapy, but it should not be done in the early gall-bladder lesion, for it is surprising what a large percentage of the population pass through life with a gall bladder full of stones that has not given much evidence of its presence. There may be some trouble, of course, but if that distress is not disabling or too severe, is it not better to make the most of it rather than deprive

the patient of the partial use that he is having from it?

The gas that these patients suffer from is quite characteristic. It is not flatulence, though intestinal gases usually accumulate concurrently from the actual indigestion that follows a partially functioning gall bladder. If it is remembered that bile from a diseased gall bladder is less in amount and less concentrated than that from a normal gall bladder, it can be readily appreciated that fats especially can be handled in small amounts only. The more fats, sweets, or sour foods that are eaten at a single time the greater will be the demand for concentrated bile in large quantities for their digestion. The less bile that is available, and particularly the less concentrated bile that is available for digestion, the more intestinal indigestion and gas that will subsequently follow.

The gas these patients complain of is belching. It occurs an hour or more after eating and it is usually belched up in one large amount, with considerable if not complete relief. The belching that many persons have five or ten minutes after eating is not gas from indigestion; it is air that is regurgitated that has been swallowed with food. This, of course, has no relation to gall bladder disease. Yet it is interpreted as belching from indigestion in at least 50 per cent of the referred patients that I see. Certain foods particularly cause gas, even in normal persons. These should not be considered seriously in evaluating the gas our patient may be suffering.

As a general rule, the more obscure the gall-bladder lesion the more care that should be taken in eliciting and evaluating the history, for it is the most important single factor in the diagnosis and prognosis of the case.

* * *

STERLING BUNNELL, SAN FRANCISCO.—That the history is most important in the diagnosis of obscure gall-bladder disease, I can heartily agree. A clear convincing history, even in the absence of gross pathological operative findings, justifies the removal of the gall bladder, as has been repeatedly proved both microscopically and by cure of the patient. I cannot agree, however, that the three main diagnostic features are pain, qualitative food distress, and gas. These can be produced by even pylorospasm alone. Not that the value of studying these three symptoms in a detailed way should not be encouraged, but for a clear workable diagnostic conception, should we not think with a wider and more rational scope? Equally important are such features as local tenderness, the history of bilious attacks when young, the possible etiology such as catarrhal jaundice, typhoid or intestinal infection, the general type of patient, and neurotic tendency, the general toxic symptoms, chilliness, fever, myocarditis, arthritis, the group of reflex symptoms, pylorospasm, nausea, vomiting, splinted respiration, the chronicity of symptoms and, finally, the

deductive reasoning, grouping all of the symptoms in their proper relation and judging the case history as a whole.

What is gall-bladder disease? Stone and infection are quite different and so is aseptic distention of the gall bladder from obstruction such as overacting cystic valve or kink, stone or swelling in the cystic duct, and these conditions act in different ways. What do symptoms mean unless coupled with pathology? So how can it be stated what the symptoms are of obscure gall-bladder disease?

The gall bladder does not cause symptoms from the loss of its function. Fats, sweets, and sour food may alike cause indigestion, though the bile acts only on the fats. The indigestion results from the deranged function of the stomach due to the reflex irritation from the gall bladder, and these foods increase the pylorospasm. The gas complained of is not from the lack of concentrated gall-bladder bile. Gas comes from aërophagia and bacterial and enzyme fermentation of proteins and carbohydrates and not from fats. In gall-bladder irritation hyperreflex action encourages aërophagia, but the feeling of gaseous distention comes much more from pylorospasm and distention and spasm of the gall bladder than from gas itself. That the gall bladder still has partial function is no contraindication to its removal. Its lost functions are readily compensated for by the body. The decision for operation is based instead on the degree of severity of the symptoms. Removal of the infected gall bladder should be done early before infection is established throughout the biliary system and before the stage of dangerous complications has been reached.

* * *

CHARLES T. STURGEON, LOS ANGELES.—In the typical case of gall-bladder disease it is very easy to make a diagnosis, and the treatment at once is apparent. But in the mild or obscure case the diagnosis is not easily made, as frequently all the symptoms are referable to the stomach and not to the gall bladder.

It is in this type of case as Doctor Mentzer mentions in his article that a carefully taken history is by far the most important single factor in making the diagnosis.

The patient will always ascribe the distress or attack to some particular article of food. This particular article of food may change with each attack, but nevertheless the patient is always sure of just what food is responsible.

My experience has been that diet does not help this patient, and that sooner or later he comes to surgery.

It is not the presence of stones so much as the complications of hepatitis and pancreatitis that demands surgical treatment of cholecystitis. These complications may be so slight in mild cases of cholecystitis that they cannot be diagnosed clinically, but if allowed to go untreated for too long

a time very slight benefit can be expected from surgery.

I do not wish to convey the idea that all obscure cases of cholecystitis should be operated on at once. A careful diet as suggested by Doctor Mentzer should be tried. If no relief is obtained from this diet, or if symptoms return as soon as the patient returns to a normal diet, I believe the patient should then be treated surgically.

* * *

THOMAS O. BURGER, SAN DIEGO.—Doctor Mentzer's emphasis of history is the most valuable single agent in establishing a diagnosis of obscure condition of the gall bladder. The history in gall-bladder disease is equally as important as in any other condition that we have in the abdominal cavity, or it may be of greater importance. However, many of us are unable to obtain an intelligent, tangible history that is at all definite. "An indefinite dyspeptic" history which emphasizes a distress in the upper abdomen all the way from soreness to severe pain, especially if gas is a prominent accompaniment, is a more or less broad diagnosis for chronic cholecystitis. But before accepting this method of diagnosis it is urgent to rule out all other possible causes of complaints.

Cholecystography gives a definite picture of function and helps to show stones which would otherwise not be found on a flat plate. Therefore, it is imperative in all questionable diagnoses to have this method carried out and also some of the other tests that are available in gall-bladder conditions. There are very few exceptions to the fact that chronic cholecystitis with stones or without is of infectious origin (cholesterol stones may be an exception). Therefore, we are to consider the conditions from a standpoint of irritation to the duodenum, that is, the functional or mechanistic standpoint of the digestive organs plus the problem of infection which has its definite effect here as well as in other focal infection. Cardiac dysfunction is caused undoubtedly very frequently by gall-bladder conditions, and in this instance I think the mechanistic as well as the focal infection idea may both be considered from the standpoint of chronic cholecystitis.

Heart complication is sometimes very difficult to diagnose as to whether its cause is the heart or the gall bladder. These are the patients that unquestionably need what might be termed a clinic diagnosis by the internist, the x-ray man, the gastro-enterologist, and the cardiologist. At times these different specialists are hard pressed to decide which and what shall be done. After a complete examination has been done thoroughly, it is a matter for the good general doctor who can use horse sense and judgment to determine whether or not this patient shall be treated medically from the vague or indefinite cause of trouble, or whether he shall be subjected to surgery. The conscientious surgeon is not willing to open these abdomens unless there is a positive finding reported by the laboratory, or a definite physical tenderness, or a typical history. This last, as Doctor Mentzer mentioned,

often emphasizes that which is telltale, and yet we at times are chagrined to find little or nothing where we had expected definite pathology. Again we must remember that gall-bladder symptoms and findings are not always constant.

University of California Doctor Tells Diagnostic Traits of Undulant Fever.—As an aid to physicians of the state, Dr. J. C. Geiger, associate professor of epidemiology at the University of California Hooper Foundation for Medical Research, has just summarized present knowledge of the comparatively recently discovered disease undulant fever, which is transmitted to human beings by goats, cows, and pigs, in an article for the bulletin of the California State Department of Public Health.

Undulant fever, he says, is oftentimes a puzzle to the physician, as its symptoms are suggestive of such other diseases as typhoid fever, malaria, tuberculosis, rheumatism, focal infections, sinusitis, appendicitis, and tularemia. He stresses the point that laboratory analyses offer the most dependable means of deciding whether or not patients have the disease.

He says: "As far as America is concerned, undulant fever is comparatively a newly recognized disease. The first case was reported about twenty-four years ago. The available evidence indicates that the causative organisms are of three general types, and usually classified as to host. The variety known as *Brucella melitensis* ordinarily prefers the goat; *Brucella abortus* ordinarily prefers the cow, and *Brucella abortus* var. *porcine*, ordinarily prefers the hog. Any of these may cause undulant fever in man.

"The epidemiologic evidence is far from being definite, complete, or conclusive. There is no doubt that raw milk, whether it be from goats or cows, offers indisputable chances for infection, provided the herds supplying them are shedding the organisms in sufficient amounts and of sufficient virulence. The low index of the disease in children and the present statistical superiority of the disease, especially in rural sections, has been used as a basis for assuming that many cases may be due to contact with infected animals. Such control measures as pasteurization of all milk and the elimination of infected animals from herds delivering certified raw milk are advocated."—*University of California Clip Sheet*.

Tulane University Names Medal After University of California Faculty Man.—Word has been received on the Berkeley campus of the University of California that Tulane University, in New Orleans, La., has created a public health award for outstanding senior or graduate students which will be called the "Geiger Medal," in honor of Dr. J. C. Geiger, associate professor of epidemiology in the California Medical School.

In an editorial in the *American Journal of Public Health*, mention of the new award is made as follows:

"There has been established at Tulane University an award to be known as the 'Geiger Medal,' to be granted yearly to that student of the university, either senior or graduate, who prepares the best thesis on some phase of public health of particular interest to the southern states or countries contiguous to them.

"We cannot but rejoice at this recognition of public health by our leading southern university.

"The medal is named in honor of Dr. J. C. Geiger, at present associate professor of epidemiology in the Medical School of the University of California. Doctor Geiger is well known for his epidemiological studies in connection with the work on botulism done by the United States Public Health Service with the department of hygiene of the University of Chicago and the University of California. He was assistant health commissioner of the city of Chicago, and was one of those who, to all intents and purposes, was dropped by Mayor Thompson."—*University of California Clip Sheet*.

California and Western Medicine

Owned and Published by the

CALIFORNIA MEDICAL ASSOCIATION

Official Organ of the California, Utah and Nevada Medical Associations

FOUR-FIFTY SUTTER, ROOM 2004, SAN FRANCISCO

Telephone Douglas 0062

Editors	{ GEORGE H. KRESS EMMA W. POPE
Associate Editor for Nevada . . .	HORACE J. BROWN
Associate Editor for Utah	J. U. GIESY

Subscription prices, \$5.00 (\$6.00 for foreign countries); single copies, 50 cents.

Volumes begin with the first of January and the first of July.
Subscriptions may commence at any time.

Change of Address.—Request for change of address should give both the old and the new address. No change in any address on the mailing list will be made until such change is requested by county secretaries or by the member concerned.

Advertisements.—The journal is published on the seventh of the month. Advertising copy must be received not later than the 15th of the month preceding issue. Advertising rates will be sent on request.

Responsibility for Statements and Conclusions in Original Articles.—Authors are responsible for all statements, conclusions and methods of presenting their subjects. These may or may not be in harmony with the views of the editorial staff. It is aimed to permit authors to have as wide latitude as the general policy of the journal and the demands on its space may permit. The right to reduce or reject any article is always reserved.

Contributions—Exclusive Publication.—Articles are accepted for publication on condition that they are contributed solely to this journal.

Leaflet Regarding Rules of Publication.—California and Western Medicine has prepared a leaflet explaining its rules regarding publication. This leaflet gives suggestions on the preparation of manuscripts and of illustrations. It is suggested that contributors to this journal write to its office requesting a copy of this leaflet.

EDITORIALS

ROCKEFELLER AND HOOPER FOUNDATION REPORTS

The Rockefeller Foundation Report.—President George E. Vincent's review of the work of the Rockefeller Foundation for the year 1928 presents a story of achievement in every way as fascinating as those of previous years. It seems unfortunate, however, that the vast philanthropic activity which this foundation carries on in many fields of medical endeavor in our own and in many foreign countries cannot receive more ample publicity; publicity which would permit the thousands of Americans who have a right to know, to come into a better understanding of the business of this institution and of the splendid service which it renders to the human family in many different lands.

In a previous issue of CALIFORNIA AND WESTERN MEDICINE (September 1927, pages 383 and 394), the activities of the Rockefeller Foundation were briefly discussed. During the year 1928 the large sum of \$21,690,738 was spent in preventive medicine activities such as the following: investigations concerning yellow fever, malaria and hookworm; support of eighteen medical schools in fourteen countries; development of professional public health training in schools and

field stations; aid to nursing schools in ten countries; emergency budgets to eighty-five county health organizations in seven states of the Mississippi flood area; aid in establishment of national health services in twenty-three foreign countries, and state health departments in nineteen American states. . . .

* * *

The Past Record of the Rockefeller Foundation. The Rockefeller Foundation came into existence in 1913, and since then has expended from its income and principal a total of \$144,189,000, surely a vast outlay and a splendid expression of the magnitude with which large works are nowadays being carried on.

A reorganization of the Rockefeller Foundation took place last year, whereby several other Rockefeller philanthropic activities were consolidated with it. After the expenditure of the vast sum above mentioned, it will still have resources of the book value of some \$168,000,000 to carry on its work. Under the new form of organization the scope of the Foundation's activities will be extended so that, in addition to public health work, new activities for the advancement of knowledge in the medical, natural and social sciences and in the humanities will be promoted upon broader lines than heretofore.

* * *

Its Work Worthy of Greater Publicity.—When the splendid record of achievement in service to the human race is considered, which already is to the credit of the Rockefeller Foundation, one cannot help but feel regret that modern-day newspaper journalism is seemingly so little interested in presenting to the people of the United States the work of such a beneficent factor in human civilization. What a host of splendid feature stories could be constructed from the American and foreign experiences of the representatives of this Foundation, and what a vastly greater inspiration the reading of such activities would be than can come from the many pseudohealth columns which nowadays confront us in so many newspapers of America.

* * *

The George Williams Hooper Foundation of California.—A much lesser known instrumentality in public health work than the Rockefeller Foundation is the George Williams Hooper Foundation for Medical Research, one of the subdivisions of the University of California and which has its home on the affiliated colleges site on Parnassus Avenue in San Francisco. It came into existence through a bequest from the late George Williams Hooper, a lumber merchant, whose will thus recited the objects of the foundation :

The net income of the endowment fund shall be expended in the maintenance and conduct of said School of Medical Research, which shall conduct and carry on investigations in the sciences and arts of hygiene, medicine, and surgery; also in the nature and

causes of disease and in the methods of its prevention and treatment, and shall disseminate gratuitously all knowledge so acquired.

In the Hooper Foundation we deal with a California institution working under the patronage of the state and doing efficient service in ample measure, all of which, up to the present, is altogether too little known to California citizens.

The director of the Hooper Foundation is Dr. Karl F. Meyer, who is ably assisted by a corps of skilled and experienced workers, who under Doctor Meyer's guidance are constantly carrying on a large number of researches of special interest to Pacific Slope physicians.

The financial resources of the Hooper Foundation are not at all comparable to those of the Rockefeller Foundation, but the spirit of service is just as intense, and in its field its capacity for good as far-reaching.

* * *

Some Recent Researches and Studies Brought Out by the Hooper Foundation.—Mention of some of the work being done in this institution is certainly worthy of mention in the official journal of the California Medical Association, and is here given.

During the last year researches of which mention could be made included:

A leprosy study tending to prove that leprosy is primarily a soil infection, but a disease which may possibly be transmitted by direct or indirect contact.

The production of an antipneumonia serum.

An experimental infection of animals with a small number of tetanus spores was worked out.

Other studies were on:

Toxin produced by the botulinum organism, and on the heat resistance of its spores.

On the paratyphoid group of bacteria.

On the outbreaks of mussel poisoning in California in 1927.

An undulant fever and its causative organism.

On skin reactions in animals and persons who are hypersensitive to certain foods, bacteria, etc.

On improvement of the convalescent serum of poliomyelitis which was originally brought out by the late Dr. E. C. Fleischner.

On various diseases which may develop spontaneously in laboratory animals.

In addition to the above, a number of special researches were made in coöperation with members of the faculties of the medical and dental schools of the University of California and with some of the trade and industrial corporations of the state.

* * *

The Coleman Fund for Deafness Research.—In the Foundation, under the Coleman Memorial Fund for the prevention, cure and alleviation of deafness, a considerable number of important and valuable investigations have been carried on, particularly in relation to otosclerosis.

In this connection members of the medical profession are reminded that "Every sufferer from progressive deafness (otosclerosis) owes it to those who in the future may become afflicted with this dread disease, to aid in these investigations

by bequeathing his temporal bones after death to this or some similar research institution for study."

Otosclerosis is one of the diseases which has baffled the best efforts of otologists throughout the world to unravel its causation and development and so pave the way for successful treatment. Physicians should keep in mind that patients afflicted with otosclerosis may render a distinct service to humanity by bequeathing their temporal bones to the Coleman Fund of the Hooper Foundation.

Readers of CALIFORNIA AND WESTERN MEDICINE who are sufficiently interested and who wish to know more of the work which is being done by the Hooper Foundation, an institution of which every Californian should feel proud, may obtain an interesting pamphlet, "In Alleviation of Human Suffering," by writing to the director of the institution. It is well for all of us to keep in mind that the Hooper Foundation of the University of California is an institution with which every Pacific Slope practitioner of the healing art may well maintain a mental contact.

A LOS ANGELES WINE TONIC ORDINANCE—A GOOD EXAMPLE OF A. M. A. PRESIDENT THAYER'S "ILL-CONSIDERED PROSCRIPTIONS"

Los Angeles Passes an Anti-Wine Tonic Ordinance.—Elsewhere in this issue, in the correspondence column of the Miscellany Department, is printed a copy of the so-called wine tonic ordinance which was recently passed by the unanimous vote of the fifteen councilmen of the metropolitan city of Los Angeles. The daily press informed the public that this ordinance was primarily passed to prevent the sale of so-called wine tonics during the Christmas holidays; although current news dispatches of the day stated that matter in hand through the issuance of an order making it obligatory to have all wine tonics contain 30 per cent of solid matter, thus practically placing such mixtures in the nonbeverage class.

So far as the medical profession was concerned, it may be assumed that few doctors would have wished to prescribe such so-called wine tonic mixtures. Physicians were concerned, however, when lay citizens, even though they were public officials, took it upon themselves to determine what doctors should or should not prescribe, for such lay action involved a principle and an infringement on presumably legal rights, in which members of the medical profession had a very natural interest.

* * *

Protests by Medical and Pharmaceutical Professions Were of No Avail.—When the ordinance was up for consideration, in spite of protests presented by representatives of the medical and pharmaceutical professions, the Los Angeles city fathers proceeded to place themselves on

record as regards wine tonics, even though their action was rather belated, and in view of the federal order, seemingly unnecessary. However, the councilmen were evidently determined, for reasons good and sufficient to themselves, to make it absolutely certain, by the passage of a new law, that no resident in the City of the Angels, during the yuletide and new year's season, should become unduly hilarious by way of the wine tonic route. The city fathers presumably had a prior caucus, for to a man they voted in favor of the ordinance printed in this issue of CALIFORNIA AND WESTERN MEDICINE.

To accomplish the end they sought, it was necessary for the council to define a wine tonic in the ordinance, which definition, it was stated, was framed by one of the more enthusiastic councilmen, and in such brief but all comprehensive fashion that not only wine tonics but a host of other drug store remedies therewith came under the same proscription. The drastic nature and scope of the ordinance and its infringements on the rights of licensed physicians and pharmacists were pointed out to the honorable councilmen and to the mayor, but all in vain. The ordinance was introduced one week, passed unanimously the next week, and on October 24, the next day, was approved by the mayor.

The publicity given to its passage already has led councilmanic bodies in a dozen or more other cities to attempt to emulate the glorious example of Los Angeles in this matter!

* * *

The Drastic Provisions of the Ordinance.—A perusal of the ordinance demonstrates that it is a most excellent example of what might be termed the intemperate legislation so often put forward by some modern-day lawmakers. Every physician and pharmacist knows what a large number of useful medicinal and pharmaceutical mixtures "capable of being used as a beverage" and "containing more than one-half of one per cent of alcohol," may be found on the shelves of drug stores and in the medicine cabinets of most American homes. Under the new ordinance any person residing in Los Angeles who would "sell, serve or give away" to some other citizen (and such act would be committed when a mother gave its child such a solution; or when a physician gave a patient such a mixture, for physicians were given no exemptions in the ordinance) would thereupon by such act become guilty of a misdemeanor. And such act is decreed a misdemeanor for each such separate offense—that is, each teaspoonful so given would be a separate offense and the giver would become liable to a \$500 fine or six months in the Los Angeles city jail, or both, and for each such offense!

* * *

Such an Ordinance Could not Be Literally Enforced.—It must be self-evident to any person of reasonable knowledge of the world that an ordinance such as this, which unless repealed will become a local law thirty days after its passage

by the city council and approval by the mayor, cannot and will not be literally and impartially enforced. This is the kind of lawmaking which does much to lower the respect of many citizens for all law. Not only do citizens become offenders when they violate the provisions of such an ordinance, but the councilmen and the mayor become double offenders because, having taken special oaths to carry into effect all laws of the community, they become false to their trusts when they do not use every endeavor to have laws which they themselves have helped bring into existence, carried out in fullest and most impartial and stringent manner. Public officials certainly have no legal or moral authority to make any exemptions at all to the provisions of a law or ordinance, for in so doing, because of their oaths of office, they themselves become law breakers.

* * *

Doctor Thayer's Remarks at the Portland A. M. A. Meeting Aptly Apply to this Ordinance. As was so well said in his Portland address, by this year's retiring president of the American Medical Association, Dr. William S. Thayer of Johns Hopkins University:

As a nation, we have of recent years set a rather sorry example in the passage of inconsiderate, ill-considered and intolerant proscriptions and prohibitions, . . . Such laws cannot be enforced; they defeat their own ends. Intolerance is the most fatal enemy of liberty. . . .

* * *

Deplorable Results Attendant upon the Passage of Such an Ordinance.—It will be interesting to watch the future of this ordinance. When it passed, the newspapers of the city referred to it as the "wine tonic ordinance" and gave little publicity to the protests of the medical and pharmaceutical professions, so that citizens at large and many members of the medical and pharmaceutical professions were not aware of its drastic and far-reaching nature.

The ordinance would seem to be a distinct infringement upon the legal rights given to a licensed practitioner of medicine to practice his art and to use those substances and solutions which he believes would be beneficial to the health or lives of his patients, and which are not inimical to the public health.

What a pity that municipal and other legislators should permit themselves to be carried off their feet by supposed public clamor or political influences, and to allow themselves to pass legislation which not only cannot be enforced but which is so ridiculous and impossible of impartial enforcement, that that majesty and respect for law which is so necessary and fundamental for progress in all real civilization is through such unwise action, put in jeopardy.

Our advice to the Honorable City Council and Mayor of Los Angeles, as regards this ordinance, would be to promptly reconsider their action, and if the orders and rulings of the federal prohibition department are still deemed inadequate, to frame an ordinance that would make for real temperance and which could be impartially enforced.

In such an effort the officers of the medical and pharmaceutical associations would be only too glad to render advisory and other aid. If the ordinance is permitted to remain on the statute books, in dead letter or other form, a dose of "pitiless publicity" might be of benefit to the community. The ray of hope in this matter, and also as regards sanity in legislation, may be in a referendum which, at the time these lines are written, rumor states, may be invoked. If such a referendum is presented, the ordinance would lie over until the local or state elections in the fall of 1930. In the meantime, the honorable city fathers of Los Angeles would have an opportunity to give their attention to a host of vastly more important civic problems which are pending on the files of the city council.

TELEPHONED NARCOTIC PRESCRIPTIONS

Changes in the State Narcotic Laws.—Under the new California anti-narcotic law, which was passed by the legislature at its last session and which became effective August 14, 1929, the control of the sale and dispensation of narcotics in the State of California was transferred to the new Narcotic Division of the Department of Penology of the State of California. Senator F. H. Benson is the director of the division.

Both Federal and California laws state that the only legal authority upon which a pharmacist may dispense narcotics is a prescription which contains, *in the prescribing physician's own handwriting*, the name and address of the patient, the actual date upon which the prescription was signed and the physician's signature. The Federal law, which is written into the California law, has been interpreted to mean that dispensation of a narcotic by a pharmacist upon the telephoned instruction of a physician is in direct violation of the law, no matter whether the physician himself signs a prescription ten minutes after such dispensation has been completed.

In the past, the authorities have been somewhat lenient in the enforcement of this clause in the law and, as is usual, advantage has been taken by those who used this lenience to indulge their laziness, carelessness or indifference, and did not confine the use of this official tolerance to times of real emergency.

* * *

Narcotic Laws Will be Enforced.—As a result, endeavoring to correct the present state of affairs, the Narcotic Division has announced that it will not countenance this violation of the law and has already caused the arrest of a licensed pharmacist who dispensed a narcotic upon a prescription telephoned to him by a duly licensed and registered physician.

The incident cited above indicates the present temper of the Narcotic Division, and it is well for us to remember when we are tempted to phone a druggist and ask him to deliver a narcotic to a patient that we are asking him to break the law and place himself in jeopardy in order to save ourselves some effort. We cannot blame him or be resentful when he refuses our request. Coinci-

dentally, the physician is also breaking the law in making the request and, at the will of the Narcotic Division, may be arrested also.

Committees from the various retail druggists' associations and some of the component county societies are working together in this matter, endeavoring to place the situation, as it exists, before the members of their respective organizations. Further consideration of the situation will be had by the officers of the California Medical Association and further information will be contained in future issues of CALIFORNIA AND WESTERN MEDICINE, or letters sent to you by the Council or Executive Committee.

In the meantime do not violate the law or ask others to abet you in its violation.

SOME TRENDS IN HOSPITAL TREATMENT, IN RELATION TO THE "HIGH COST OF MEDICAL CARE"

Reasons Why More People Do Not Go to Hospitals.—In the last few years much has been said in medical meetings on the advisability of teaching the public how advantageous it would be if the members of the public who were sick or injured would more often go to hospitals. The benefits of the more skilled nursing care and the better environment of the hospital service have been cited as good reasons for giving such advice.

Incidentally it has also been quietly acknowledged in professional circles that the physician or surgeon who has a very large practice is able to do much more work and with far less wear and strain to himself when his patients are housed in hospitals than when he is obliged to visit a corresponding group of patients living in different parts of a city and each with a somewhat different social and family environment. The younger or less busy physician also very often finds personal satisfaction in his hospital work, because even though he may have fewer patients the hospital makes for pleasant contacts with colleagues whom he meets as rounds are made.

However, the major argument for hospital care is that the patient as a rule there receives much better treatment than in the home, and that increased hospital cost is only relative in that the patient through hospital care is able to return to his home and his work at an earlier date than would be possible under treatment at home. From the standpoint of cold-blooded scientific medicine, the argument just stated is not without considerable merit. If all the patients sent to the hospitals for this better care had the means enabling them to pay for the extra cost of the same, there seemingly could be no objection to this plan of general or universal hospital treatment.

Therein, however, lies the rub, or the bone of contention. For the great majority of patients do not have the financial resources which permit them to enter a hospital, without attendant worry or disaster over the overhead costs incident to such hospital regimen. And because of this fact, the theory of the better care in hospitals, and of sending more sick and injured people to the hospitals, like other theories that are not based on con-

ditions as they actually exist, loses much of its force.

* * *

Some Limitations of the Hospital Propaganda. Since many physicians have permitted themselves to be parties to this propaganda to have more and more patients go to the hospitals for better care, in preference to receiving home treatment, it may be well to consider some of the facts as they are, and to ask whether or not such propaganda is desirable at this time, and as to what and to where it will lead if continued.

To start the discussion let us look at the existing set-up of general hospitals in states like California, Nevada, and Utah, since the readers of CALIFORNIA AND WESTERN MEDICINE belong to the medical professions of those three states.

Practically no all bed charitable hospitals of any size exist in any of these three states; if the public county or city hospitals, sanctioned by law to care for penniless or indigent sick and injured citizens, are excluded. The number of other hospitals in these states which have any considerable number of free or semi-free beds is also almost nil. To put it frankly, practically all hospitals in these states which offer to care for citizens sent in by physicians in private practice have heavy carrying charges on either their properties or current overhead, more often on both than on one.

With the cost of grounds and buildings we shall not here concern themselves. If the real property, its improvements and its equipment represents fair value for the amount invested therein, and if the buildings, as hospital structures, and the equipment, are well adapted to hospital needs from both the scientific and administrative standpoints, there should be little criticism from lay sources. For in most instances each such institution came into being as a result of the need for an average or a peak hospital load in its respective community.

As regards the administrative overhead of hospitals, there can be wastage in that department, through inefficient or mediocre management or through too heavy salary rolls, just as there can be in a hotel, for instance; because, in one sense, a hospital is little different from a hotel except that its patrons are sick instead of well persons.

* * *

The Cost of Some Professional Services in Hospitals.—This leaves for comment what might be called the special professional services which are part of the hospital itself, namely, the nursing expenses. The cost for professional services of physicians and surgeons is a cost apart from that of hospital care, and does not come under consideration in this argument.

Scientific medicine made comparatively little or slow progress up to a half century ago, when bacteriology gave a new insight concerning infectious diseases and many medical and surgical conditions. Professional nursing, the new handmaiden to this modern scientific medicine, came into existence about that time, and soon gave Americans the "trained or graduate nurse," or latterly, as she is called, the "registered nurse—

R. N." Today, when a modern hospital is thought of, there comes at once the visualization of the trained or graduate nurses, who are so intimate a part of its institutional activities.

* * *

Professional Nursing was Sponsored by the Medical Profession.—Members of the medical profession, who laid the foundations for modern trained nursing, who have been the sponsors of trained nurses everywhere, and who have taught the public to accept trained nurses, have a record of service on behalf of nurses sufficient to protect them against assertions of selfish or other undesirable motives if tendencies in modern professional nursing are somewhat critically examined by them. Such survey is desirable if it is possible that a considerable portion of the "high cost of medical care" to which so much publicity is given among the laity, verbally and in print, is found to rest somewhat upon the costs of modern-day hospital nursing.

* * *

How Much Nursing Do Many Hospital Patients Need?—To view the facts as facts, all must acknowledge that many patients in hospitals need only a minimum amount of nursing care, and that if a member of the family could come in and become a part of the hospital system, and give personal and other care to the sick relative, the patient so cared for would go on to good convalescence. For given the case of a hospital patient who has a relative with intelligence, that patient as a rule would prefer the care of such a loved member of the family to that of a stranger even though she be a trained nurse, who at times may be psychologically or otherwise distasteful to the patient.

It is granted by all, that seriously ill patients in hospitals, especially those suffering from surgical conditions, only too often need all the constant and excellent supervision which only the well-trained graduate nurse is as a rule able to give, and such patients may need such care every hour in the twenty-four. Likewise, it has always been agreed that no one nurse could give continuous service without adequate sleep and rest. At least two shifts of nurses are conceded to be necessary, and perhaps three, when seriously ill patients are being cared for.

But it is a very considerable jump from the affirmation that three shifts of trained nurses may be necessary in the care of a limited number of patients to the contention that all hospital patients for whom a certain amount of nursing attendance and supervision is desirable should be provided with three such graduate nurses, each on an eight-hour, sort of labor-union schedule, and each receiving \$6 to \$10 per day, depending on the case. Such rates would mean \$18 to \$30 per day for a single day's nursing care.

Some hospitals in California have already accepted such a system and have endeavored to point out that it is an economical system. So it may be, if the patients involved have adequate financial resources, but it is certainly not if the

patients do not possess such means. The great majority of hospital patients lack the possession of such ample financial reserves.

* * *

One Solution of the Fees Involved in an Eight-Hour Nursing Day.—One solution for this new financial problem that has recently demanded the attention of hospital administrators (a considerable number of whom are already almost smothered by their financial overheads) has been the suggestion that if under pressure the eight-hour schedule is forced on hospitals that it be accepted at so much per hour instead of so much per day, with the eight-hour day as the maximum or industrial limit for a calendar day's work.

* * *

Some Other Trends.—More recently it is said that some of the more enthusiastic graduate nurses hold that nurses should charge somewhat as do some surgeons; that is, a nurse who states she is a specialist in pneumonia, for instance, assumes the nursing responsibilities on the basis of a fixed or lump fee for the services to be rendered, say \$500 for caring for a pneumonia patient. If such a movement should be promulgated by nurses in general, it would not be long before many of them would have a greater net income than do many physicians, who are on call throughout the day and night, and who are paid when the patients think best.

Along the same line, the old story of the man who rang a physician's door bell at one o'clock in the morning, on a rainy night, to show the physician the way to the home of a sick relative in the country, may be here told. Upon arriving at the house, the man asked the physician the fee for the visit, paying the physician \$5 and dismissing him after telling him that the taxi charge would have been twice or thrice the amount. Our nursing aids evidently intend to take no such chances, for we have been told that a recent fee schedule states that calls to service after the p. m. will contain an extra charge for taxi service.

* * *

Important to Study All Factors in Hospital Costs.—It is quite possible that the presentation of some of the facts here made, brief as they necessarily must be because of the limitations of this column, may seem somewhat extreme or biased. Such is not the intention. If these comments, however, serve to stimulate thought on these and related subjects among the component county societies their object will have been achieved.

Excluding a rather small number of physicians and surgeons, it is well established that the great majority of physicians and surgeons are today not receiving fees which, in purchasing power, are as high as those received in the days before the war, that is, in the days before the present "high cost of living."

As has been stated in this column, members of the medical profession owe it to themselves, their profession, and to the public, to be keenly interested in these economic problems. Indifference

here may permit cumulative movements that could play havoc with medical standards and practice. Suggestions for betterment of existing conditions are invited by the officers of the California Medical Association.

The Ten Commandments of Cancer.—1. Do not cut across a cancer and leave part behind. The part remaining will grow more rapidly than if you had left it alone, altogether.

2. An operation for cancer is an operation to save life. Cosmetic results are to be considered, but they are not to be weighed against recurrence and death a few years later.

3. Never manipulate a cancer roughly either before or during operation or more often than is necessary to make a diagnosis. To do so is the easiest way to drive cells into the lymph or blood current—hence metastasis.

4. Do not let a woman drag you into her delusion that her early cancer symptoms are due to the menopause. The menopause is a normal physiological state, and if the woman's organs are healthy she will be healthy.

5. Repair every cervix that is eroded, everted, or the seat of a discharge.

6. Do not rule out cancer because the patient is not old. About 10 per cent of cancers occur before thirty-eight.

7. Do not tell your patients they have cancer if you are sure they will follow your advice at once. If they are inclined to delay, tell them frankly what they have and what will be the consequence of delay. If they make their own choice, let it be done with full knowledge of facts and prospects. Tell the relatives or friends in any event.

8. To save your patients from cancer save them from delay. Do not wait for pain and cachexia—the signs of impending death.

9. Do not admit that incurable cancer is unrelievable cancer. Ligation, cautery, palliative removal, electrocoagulation, irradiation, and other proven physical methods may change distress to comfort and add months or years. The patient who appeals to you for relief is the one to be considered—not reputation or "the effect on the community."

10. Be always on the watch for early suspicious symptoms. Be prompt to follow them to a definite diagnosis. Be courageous enough to insist on immediate proper treatment (*Weekly Roster and Medical Digest*).—*Illinois Medical Journal*, September 1929.

Dangers of Hydrocyanic Gas.—A conference was held during the month between representatives of the Board of State Harbor Commissioners, the State Department of Public Health, and the Industrial Accident Commission, to consider the possible use of hydrocyanic gas for fumigating purposes on the docks. This gas is used to fumigate vessels and cargoes. If cargo is placed on the dock and a tarpaulin is struck by trucks or moved by a passer-by, the escaping gas might kill a number of persons in the vicinity; it was used with deadly effect in the World War. The Board of State Harbor Commissioners has issued an order against the use of the gas on any of the docks.

New dangers will follow the passage of the Economic Poison Act. Strict precautions surround the sale of poisons under one pound in weight. These restrictions are now removed when the purchase exceeds one pound. Hydrocyanic gas, for instance, can be purchased in large quantities. It is used to fumigate trees in orchards. Sometimes it is brought into play to kill unwelcome visitors, not of the human species, in sleeping quarters. Its escape out of bounds will cause havoc some of these days, and public attention needs to be drawn to the wholesale use of poisons in industrial and public activities, to the end that disastrous results may be avoided.—*Reports of California Department of Industrial Relations*.

MEDICINE TODAY

Current comment on medical progress, discussion of selected topics from recent books or periodic literature, by contributing members. Every member of the California Medical Association is invited to submit discussion suitable for publication in this department. No discussion should be over five hundred words in length.

Allergy

Allergy—Impressions Gathered From the Portland Meeting.—There are several general impressions of the progress made in the study of allergy that were evident from the Portland session. The realization that this new field of medicine is firmly grounded was obvious, and that this new subject was given its place along with other branches of medicine is an important advance.

Twenty-five years ago the rôle of infections as a principle cause of disease was emphasized; now the equally important and probably distinct group of diseases, those of hypersensitiveness, is encroaching on the place in pathogenesis held by the infectious group. The conception of this cleavage is not without many opponents who have been attempting to bridge this natural gap with many superficial interpretations of experiments.

The most striking feature of the program was the absence of discussion on the general subject of vaccines. In fact, vaccines were mentioned only to be condemned.

The enormous literature on infection-combating measures to relieve hypersensitive diseases is rapidly disappearing. In its place we find the elaboration of empirically worked out necessities for diagnosis. The fact that bacteria, in addition to inducing an infection, can be one of the causes of hypersensitiveness may be recognized, but without confusion.

Professor Manwaring's most interesting paper on the "Immunological Prophecy Found in Ancient Hieroglyphics," gave us a perspective of the work. The fallacy of attempting to put into the practice of human immunology the improperly interpreted, incompletely carried out animal experiments was glaring.

Doctor Hurwitz, in sketching the early history of hay fever, impressed us by tracing our so-called modern diagnostic methods back to 1868.

A plea was made for uniform nomenclature of the various trees, weeds, and grasses, for there is an increasing trend toward accurate detailed local flora studies. Such properly conducted local flora studies constitute the cornerstone of successful pollen treatment. It was agreed that Professor Le Roy Abrams' classification should be the standard.

Dr. George Piness clearly emphasized the importance of specific pollen factors in communities where irritating potash dust was thought to be the all-important factor.

Probably the most illuminating paper was that of Dr. Warren T. Vaughn, in which a plea for general medical diagnosis and care be not overshadowed by a specific allergy study in a patient.

Physical allergy was again emphasized, the

explanation resting on Sir Thomas Lewis' work with "H" (most likely histamine) substance.

The question of food allergies was emphasized. The principle feature of the discussion which followed was the enormous importance of history and the relative unimportance of the skin test. It was significant that the use of digestants as a treatment of food allergy, as outlined by Orville H. Brown, was given a most favorable reception. This seems logical, for it is now definitely known that whole protein can pass through the normal intestinal mucous membrane, and it is also well known that even partially digested protein in passing through the normal intestinal mucous membrane may also cause hypersensitive symptoms. There is no evidence that completely digested protein leads to any difficulty, therefore the use of digestants seem rational.

The fundamental problem of the underlying disturbing elements which make certain human beings sensitive remains untouched.

EDWARD MATZGER,
San Francisco.

Medicine

Pituitary Tumors and Skeletal Changes.—That the pituitary gland has a definite influence on skeletal growth is a well-known fact, based upon abundant experimental and clinical evidence. Its growth hormone is produced by the pars anterior and is necessarily most active during the period of infancy, childhood, and adolescence. While many general or local conditions may influence the function of this organ, tumors arising within its tissues or adjacent to it should be considered as the most important because of the serious effects produced by them. Such lesions in many instances produce striking and profound changes in the skeletal tissues.

Retarded Skeletal Growth.—Any retardation in skeletal development will naturally take place most characteristically during the period when normal changes are most conspicuous and will play a very minor rôle in the syndrome after adult proportions have been reached. Tumors probably always produce such an effect, not by any specific activity of their constituent cells, but rather by a compression atrophy of the normal glandular tissue. This may be the result of either one of two mechanisms. The first, an *indirect and distant* effect, is sometimes associated with tumors of the posterior fossa when obstruction of the ventricular system results in dilatation of the third ventricle. This tends to compress the pituitary body into the sella with more or less atrophy of its tissues. It is also found occasionally in cerebral tumors which produce a similar though less marked effect by distortions produced in the region of the third

ventricle. The second effect is a more *direct and local* one, the normal tissue being compressed against the sellar walls by a tumor arising within the substance of the gland. Inasmuch as *chromophobe adenomas* rarely occur during the growing period, skeletal changes are extremely rare in the symptom complex produced by them.

With *congenital cystic tumors* arising from the remains of the cranio-pharyngeal duct, it is a different story. They usually develop during the growth period, and the gradually enlarging cyst compresses the pituitary and distorts the optic chiasm and the walls of the third ventricle. The syndrome resulting from these anatomical changes is rather characteristic. The child often complains of headaches, and progressive loss of vision with primary optic atrophy ensues. If the onset is early, before the cranial suture lines have become ossified, the head will become enlarged (hydrocephalus). Adiposity and stunted growth are also prominent features. Diminished gonadal function is manifested by a disturbance or loss of menstrual function in the adolescent female and a retardation of the development of the external genitals in the male (Fröhlich's syndrome). Epileptiform convulsions, with other bizarre symptoms, may also be present to complete the clinical picture. *A failure to grow and increasing adiposity, associated with progressive failure of vision in an adolescent should make one very suspicious that this type of lesion is present.* An interesting and unexplainable feature, particularly in the presence of an extensive hydrocephalus, is the mental precociousness of many of the younger victims. A skiagraph of the head in these cases will usually reveal bony changes of the vault accompanying hydrocephalus together with flocculent calcification in or above a normal or enlarged sella.

Exaggerated Skeletal Growth.—The occurrence of hyperpituitarism, as associated with a chromophile adenoma, is a more familiar condition. Should the tumor begin to grow before the epiphyses have become ossified, *gigantism* results. If it develops in middle life, as commonly occurs, the condition is recognized as *acromegaly*. The characteristic bony changes associated with this condition, discernible by clinical and roentgenographic study, are enlargement of the sella turcica, thickening of the bones of the cranial vault, prominence of the supra-orbital ridges due to hypertrophy of the frontal sinuses, mandibular or occasionally maxillary prognathism with spacing of the teeth, tufting of the terminal phalanges, dorsal kyphosis with a large barrel-like chest, exostoses with occasional fusion of the vertebrae, and hypertrophy of the points of muscular attachment.

It is important in any case presenting abnormalities of skeletal growth to investigate the pituitary as a possible source of the difficulty. If a tumor is present there are usually other evidences present which should make the nature of the condition clear.

CYRIL B. COURVILLE,
Los Angeles.

Allergy

Bacterial Allergy.—Bacterial allergy is a phase of immunity. It is best known and has been most carefully studied as it appears in relationship to tuberculosis. The reaction was first noticed by Koch and discussed by him in 1890, when he announced the discovery of tuberculin. One of his observations was to the effect that the normal and the infected guinea-pig react differently to an infecting dose of bacilli. This observation was known as the Koch phenomenon. It received very little consideration until the time of von Pirquet in 1907, when he called it *allergy*, meaning altered reaction of the cell.

The condition of cell sensitization upon which bacterial allergy depends is produced when bacterial protein circulating in the blood stream comes in contact with the body cells. It changes them from a condition of indifference to one of sensitivity. It is similar to, yet different from the sensitization which takes place to nonbacterial protein. Much study will probably be necessary before the true nature of the difference is understood. Both are due to the parenteral introduction of protein to the body tissues. The origin of the protein in infection is some bacterial focus within the tissues, while that of the allergic diseases caused by nonbacterial protein is from without the body, the entrance being made through mucous membranes, or the skin.

Cell sensitization and a consequent allergic reaction to future contacts between the body cells and the specific bacterial protein, which is responsible for the sensitization, is now found in several diseases other than tuberculosis, such as tonsillitis, rheumatism, scarlet fever, typhoid fever, sinusitis, bronchitis, etc. In fact, the presence of both humoral and cellular effects is gradually being recognized as a part of the immunity response in an ever increasing group of infections.

Where sensitization exists it exerts a protective influence against the specific bacteria which are responsible for it. It attempts to hold the bacteria to the place of implantation and impedes their passage through the tissues. By its action upon bacterial protein it causes a local inflammatory reaction, the *allergic reaction*, which, in reality becomes the local manifestations of the disease. As a result of the reaction, bacteria are detained or held at the point of first entrance, many of them are destroyed, and in case infection occurs the reaction favors healing.

In tuberculosis the allergic reaction causes the local pathology of exudation, proliferation, caseation, and destruction; it causes the symptoms of the disease and the evidences found on palpation, percussion, and auscultation; it causes the reaction of the cells to tuberculin, the shadows shown on the x-ray film, and the necrosis which is productive of bacillus-bearing sputum. Whenever tuberculo-protein escapes from a focus and circulates in the body fluids, if sufficiently concentrated, it causes reaction, mild or severe, in all unhealed foci. This is the cause of the widespread signs of activity in pulmonary tuberculosis

which, in the past, were often interpreted as an extension of the process at each point where activity is apparent.

The reaction, too, causes proliferation of the cells in the periphery of tubercles, even though they be caseous, and is responsible for scar formation and healing.

F. M. POTTENGER,
Monrovia.

Bacteriology

Economic Value of Mosquito Control.—Current arguments in favor of mosquito control are based largely on the rôle of mosquitoes in the transmission of human disease. More convincing arguments based on the control of economically important veterinary diseases have been largely overlooked. The recent demonstration of mosquito transmission of fowl-pox is, therefore, of general interest.

Klinger, Muckenfuss, and Rivers¹ report that at least two common species of mosquito can transmit this disease, and that the mosquitoes remain infectious for at least two weeks after biting a diseased fowl.

While fowl-pox is rarely fatal, it does cause a serious economic loss through reduction in body weight and interference with egg production.

W. H. MANWARING,
Stanford University.

REFERENCE

1. Klinger, I. J., Muckenfuss, R. S., and Rivers, T. M.: Transmission of Fowl-Pox by Mosquitoes, *J. Exper. Med.*, Vol. xlix, p. 649, April 1929.

Urology

Prostatic Massage.—The technique and indications for prostatic massage are probably as little understood by the average physician as any urological procedures which he is called upon to perform. Pelouze has described these in detail in his recent work.¹ Gentleness is the first and foremost necessity in prostatic massage, as indeed it is in any urological procedure. If prostatic secretion for diagnostic purposes is desired the patient washes the urethra by voiding, then stands or kneels with the body flexed on the thighs. The gloved, lubricated index finger is passed into the rectum as far as possible, its tip reaching a little above the upper margin of the prostate. The vesicles are situated just above this margin on either side, and are stripped as high as the finger can reach by a downward motion, first on one side, then on the other. It is more successfully accomplished if the bladder has previously been filled with an antiseptic solution. After this is repeated several times, first one lobe of the prostate is massaged by passing the finger over its surface in a downward and medial direction, four or five strokes being necessary to cover the lobe. Then the other lobe is massaged in the same manner. After both lobes are thus emptied into the posterior urethra the latter is gently stripped by passing the finger downward in the midline. Inasmuch as the prostatic urethra is the most sensitive portion of the prostate this latter manipula-

tion must be very gentle and not repeated more than once or twice. If this method of massage is carried out, it is seldom that a secretion cannot be obtained, even though only very gentle pressure is used.

Prostatic massage must not be repeated more frequently than twice a week; every five days is preferable.² Very gentle pressure is used at first, and gradually increased at each subsequent treatment. It should never be so severe as to cause the patient extreme pain. A slight show of blood in the secretion is an indication of roughness. As the prostate becomes accustomed to massage it can tolerate more pressure.

A prostatic secretion which contains more than six pus cells per high power field is evidence of prostatitis, and in most cases is an indication for treatment by massage. It is not possible to treat a prostate long enough and thoroughly enough to rid it of every pus cell.³ When there are but four or five pus cells in the high power field, and these are not in clumps, a better result is not required unless the patient still complains of symptoms which might be attributed to the prostatitis. Sexual hygiene can do more than anything else to clear up this last remnant of infection.

Acute inflammation of the prostate contraindicates massage.¹ Disturbance of the organ in this state only serves to increase the inflammation. It may produce abscess formation, or may liberate infection causing a systemic reaction. It should never be massaged in the presence of an acute urethritis, for many prostates have become infected after such manipulation.

A few patients will be found who seem to have an idiosyncrasy for massage. Their symptoms will increase; frequency and urgency will develop after the massage, and no improvement will be evident. Such patients are best treated by other methods. It is doubtful if massage aids in the treatment of the tuberculous prostate; in fact, some authorities state that it is both harmful and dangerous.⁴ The same may be said of the carcinomatous prostate. Massage of the fibrous and hypertrophied prostates is not beneficial unless infection is present, but neither is it harmful.

Summary.—The technique and indications for prostatic massage are important. In massaging the prostate gentleness is paramount. The vesicles and prostate are stroked with a downward and medial stroke, then with a light downward stroke in the midline. More than six pus cells per high power field is an indication for massage treatment, unless there is acute inflammation in the prostate or urethra.

ROGER W. BARNES,
Los Angeles.

REFERENCES

1. Pelouze, P. S.: *Gonococcal Urethritis in the Male*, pp. 201-216, 1928 edition. W. B. Saunders Co.
2. Jeck, Howard S.: Present-Day Treatment of Gonorrhea in the Male, *J. A. M. A.*, 93:253, July 27, 1929.
3. Keyes, E. L.: *Urology*, p. 192, 1928 edition. D. Appleton & Co.
4. Pelouze, P. S.: *Gonococcal Urethritis in the Male*, p. 215, 1928 edition. W. B. Saunders Co.

STATE MEDICAL ASSOCIATIONS

CALIFORNIA MEDICAL ASSOCIATION

MORTON R. GIBBONS.....President
 LYELL C. KINNEY.....President-Elect
 EMMA W. POPE.....Secretary

OFFICIAL NOTICE

Narcotic Law Enforcement.—In an editorial in this issue the attention of the members of the California Medical Association is called to the present rigid enforcement of the existing Narcotic Law in California, and members are warned against inadvertent violation thereof. The editorial referred to is published on page 433 of this issue.

COMPONENT COUNTY SOCIETIES

ALAMEDA COUNTY

The Alameda County Medical Association held its monthly meeting at the Ethel Moore Memorial Building on Monday evening, October 21. Dr. Guy Lilienkrantz reported a case of Paget's disease, showing x-ray films, with typical lesions in the skull. The doctor discussed the etiology and pathology of this condition stating that further reports would be forthcoming at a later date.

The regular program of the evening was presented by the San Francisco County Medical Society. Dr. William J. Kerr talked on some of his recent European experiences and gave a brief review of the special work done by him on the reactions of the peripheral vascular system. Doctor Kerr spent eight months of his Sabbatical year in London in intensive work on the etiology and treatment of Raynaud's disease. The doctor demonstrated conclusively that this condition is a local reaction to cold and is not controlled by the general sympathetic supply, as has been so extensively believed in the past. Attacks of the disease could be brought on at will by exposure to cold. In most cases of Raynaud's disease the normal reactive powers of the individual to cold could be stimulated and increased by repeated exposures. This fact led Doctor Kerr to condemn the orthodox treatment of protection from cold and to sponsor one which exposes the part to low temperature over considerable period at certain definite intervals of the day.

The second paper of the evening was on the "Etiology and Treatment of Glomerular Nephritis" by Dr. Thomas Addis. Doctor Addis reminded the Association that the three outstanding signs of glomerular or hemorrhagic nephritis, as typified in scarlet fever, are hematuria, facial edema, and hypertension. Fifty per cent of these cases do not improve. Red blood cells may be found microscopically in the urine indefinitely. In reviewing the etiology of this disease, Doctor Addis pointed out the fact that almost invariably glomerular nephritis was the sequel to some type of streptococcal infection, occurring, not during the height of the disease, but after an interval of from seven to twenty-eight days. In discussing the manner in which all this was brought about, Doctor Addis suggested the possibility of allergy as a determining factor. The doctor did not approve of the orthodox method of treating glomerular nephritis by purging, sweating, and protein starvation.

GERTRUDE MOORE, *Secretary.*

CONTRA COSTA COUNTY

A joint meeting of the dental and medical societies was held in Richmond at the new Hospital Richmond on Monday, October 28.

J. Millberry, dean of the Dental School of the Uni-

versity of California, very interestingly spoke on the subject of Organization of Dental-Medical Building.

J. W. Bumgarner, vice-president, presided. The following members were chosen by the chair as a committee to arrange for the annual banquet of 1929: J. L. Fraser, J. W. Bumgarner, J. M. McCullough, S. N. Weil.

S. N. WEIL, *Secretary.*

✽

FRESNO COUNTY

The regular meeting of the Fresno County Medical Society was held at the St. Agnes Hospital, Thursday evening, at 8 o'clock, November 5. Fifty members were present.

Minutes of the previous meeting were read and approved.

Dr. T. F. Madden, chairman of the nominating committee, submitted the following report: W. E. R. Schottstadt, president; G. K. Nider, first vice-president; R. W. Dahlgren, second vice-president; J. M. Frawley, secretary. Member of Board of Governors, Charles James. Delegates to the State Association, A. E. Anderson and W. F. Stein.

Doctor Madden reported that he was carrying on negotiations to have a joint banquet with the Fresno Bar Association. If this does not materialize he will arrange to have a scientific program for the December meeting.

The speaker of the evening was Dr. C. J. Lunsford. He gave a very interesting and instructive talk on "Ringworm Infection." He illustrated his subject with a large number of lantern slides and microscopic specimens, and demonstrated the organism under the microscope. Doctor Lunsford considers thymol the best agent in the treatment of this condition.

Dr. Otto Diederich, in discussing this paper, said he treats the scalp of children by epilation of all the infected hairs with forceps. In this valley there are many acute cases during the hot weather.

Dr. W. G. Millholland said that he has successfully treated ringworm of the nails by giving three times the erythema dose with x-ray.

Doctor Tillman said that his experience with ringworm in this valley was extensive. Most of the cases were eczematoid type.

The paper was also discussed by Doctors Long, Vanderberg, Hare, and Dahlgren.

J. M. FRAWLEY, *Secretary.*

✽

NAPA COUNTY

The regular monthly meeting of the Napa County Medical Society was held at the Veterans' Home, Dr. A. K. MacGrath presiding. A most delicious meal preceded the meeting. Those present at the meeting were: Doctors A. K. MacGrath, George Wood, H. R. Coleman, George I. Dawson, E. F. Donnelley, Robert Northrup, C. A. Johnson, R. E. Poole. Visitors: Dr. B. M. Johnson and Dr. A. E. Chappel.

The minutes of the previous meeting were read and approved. Routine business was transacted. The application of John Robertson, D. D. S., M. D., for membership in the society was read and unanimously approved by those present.

The election of officers for the year 1930 resulted in the following members being elected to office: George I. Dawson, president; Robert Northrup, vice-president; C. A. Johnson, secretary-treasurer.

Doctor MacGrath, president, announced that the Napa County Medical Society had been invited to the Solano County Medical Society meeting to be held in Vallejo, December 3.

The speaker of the evening, Dr. Gordon Hein of

San Francisco, gave a most interesting discussion of some of the more recent methods in the treatment of medical problems, which was of particular interest to the general practitioner. He also demonstrated some interesting x-ray films. This was followed by informal discussion of general subjects.

C. A. JOHNSON, *Secretary*.

✱

PLACER COUNTY

The Placer County Medical Society held its annual meeting in the Masonic Hall at Colfax, Saturday evening, November 2, being called to order at 8:15 o'clock by the president, Dr. Max Dunievitz.

There were present the following members and visitors: Members—Doctors Dunievitz, Russell, Fay, Peers, Thoren, Paul Barnes, William Miller, Durand, C. Conrad Briner, Monica Stoy Briner, Jones, Johnson, Rood, Lewis, and Fanning. Visitors—Doctors Gorley and Cameron of Weimar; O'Connor of Murphy; Ralph Miller of Colfax; Alfred C. Reed, San Francisco; and Gundrum, C. B. Jones, Beach, and Haig of Sacramento.

After attending to routine business, the applications for membership of Ralph B. Miller of Colfax and A. W. McArthur of Lincoln were read and they were unanimously elected to membership, subject to visé by the state office of the California Medical Association.

Then followed the election of officers, which resulted as follows: President, Max Dunievitz, Colfax; vice-president, C. Conrad Briner, Lincoln; secretary-treasurer, Robert A. Peers, Colfax; associate secretary, Charles J. Durand, Colfax. Delegate, C. Conrad Briner. Alternate, Carl P. Jones of Grass Valley.

Following the election, Doctor Dunievitz showed a patient suffering from splenomyelogenous leukemia. This patient was shown by Doctor Dunievitz at the November 1928 meeting, at which time the prognosis was stated to be very poor. Since that time this patient has been treated by x-ray at the University of California Hospital, with very marked improvement.

Dr. Carl P. Jones of Grass Valley exhibited a patient seventy years of age with a fracture of the upper end of the right femur. This fracture was treated by means of an ingenious splint devised by Doctor Jones, which is particularly suitable for such fractures in old people. The patient, while having perfect immobilization of the fragments, is able to change positions and to sit up in bed without pain or discomfort.

Doctor Jones exhibited a number of x-ray plates of similar cases successfully treated, and stated that by use of this splint the danger of hypostatic pneumonia is practically eliminated.

The address of the evening was a "Travelogue Through the Orient," illustrated by lantern slides and given by Dr. Alfred C. Reed, dean of the Pacific Institute of Tropical Medicine, Hooper Foundation, University of California.

Doctor Reed showed pictures of Egypt, Palestine, Mesopotamia, India, Ceylon, Siam, and Japan. It was his desire to furnish those present with a demonstration of the types of people of these countries together with illustrations of the living and sanitary conditions under which they pass their lives. In this way, one secures a proper background to an understanding of the difficulties encountered in treatment and control of those diseases peculiar to tropical and oriental countries.

Doctor Reed's address was extremely interesting and very much appreciated.

ROBERT A. PEERS, *Secretary*.

✱

SACRAMENTO COUNTY

The regular meeting of the Sacramento Society for Medical Improvement was held at the Senator Hotel on October 15, and called to order by President Pope at 8:45 p. m.

The minutes of the previous meeting were read and approved.

Doctor Wilder reported a case of gum found in the bladder of a male patient, aged thirty-nine. The patient had complained of pain and intermittent stoppage of the urine. On examination a foreign body was

found which the patient admitted had been inserted into the bladder several years before. A suprapubic cystotomy was done and the object removed was found to be a portion of gum densely covered with phosphates.

Doctor Gundrum reported a case of paresis which had been treated by malaria and then by thirty hyperpyrexial treatments. In each treatment the temperature had risen to 104 F. Marked improvement in the patient's conduct followed the treatments. A graph illustrated the hyperpyrexia.

Discussion of the subject for the evening, "Symposium on Lobar Pneumonia," was opened by Dr. J. Snyder, who discussed the etiology and pathology. He stated that any organism may cause pneumonia, but the most common are the four types of pneumococci and likewise the *Streptococcus viridans*, *Friedlander's bacillus*, and the *staphylococcus*. No matter what the causative organism, all types are reportable by law. Of the pneumococcus, types one and two are the cause of two-thirds of all the cases. Type three is found in about 9 per cent of cases, and type four in 25 per cent of cases. The portal of entry is usually through the respiratory route. In either pneumonia we have a predisposing factor, the immobilization of the chest wall, and here the common organism is the type four variety.

Under pathology of pneumonia, Doctor Snyder discussed the four stages found: engorgement, red hepatization, gray hepatization, and resolution.

Pneumonia in pediatrics was discussed by Dr. E. Sevier, who stated that pneumonia in children is common as a primary disease and may occur at any age, but is most common in children over three years of age. In children under two, 75 per cent are of the bronchial type.

The lesions in lobar pneumonia occur most frequently in the following order: left base, right apex, and right base.

The symptoms are sudden in onset and usually disappear in one week. In the signs, bronchial breathing usually shows up late.

Complications are few, empyema being the most common. The termination in lobar pneumonia is usually rapid recovery or death.

The treatment in lobar pneumonia is rest. Mustard paste and diathermy are great aids. The nervous type, due to high fever, is the hardest to combat and treat. Bromids or codein are helpful in this condition. If nervousness appears late the prognosis is grave.

Dr. F. Reardan spoke on complications and emphasized the fact that diagnosis is imperative. In the pulmonary complications pleurisy with effusion is common. Empyema is not uncommon and these complications are dangerous. Massive collapse of the lung should be easy to diagnose, especially by means of the x-ray. Lung abscess may occur and is probably more common than recognized. Gangrene is rare. Hemorrhage may be an initial symptom. In the latter complications, delayed resolution occurs quite frequently. Due to this condition, anoxemia, or a lowered amount of oxygen may occur in the blood.

In the cardiovascular system the complications are not so common but they should be kept in mind. Pericarditis is the most common. Dilatation of the right side of the heart is fairly common, due to lung obstruction. It likewise may be due to a toxic condition. Heart-block may occur. Thromboses may occur any place.

In the gastro-intestinal tract tympanites or diarrhea may occur. Acute dilatation of the stomach is not serious if recognized. Peritonitis due to streptococcus is dangerous and if due to the pneumococcus is usually fatal.

Nephritis may occur and renders the condition grave.

The nervous complications may be simple. These are more common in children. Pneumococcus meningitis may occur, and this condition is grave.

Dr. F. Scatena discussed treatment. In the matter of treatment the patient's resistance is of most importance. Absolute rest in bed in the most comfortable position is demanded. The room should be well ventilated with the patient well covered. Hydrotherapy

for increased temperature adds to fatigue. Alcohol rubs serve the same purpose and are better.

Digitalis, in massive doses at first and then tapered off with small doses, should be given to patients with bad hearts. Caffein is a good stimulant, but may cause too much irritation. Strychnin has been discarded. In collapse, strophanthus grain 1/250 may be given intravenously. Morphin when properly used is the best stimulant and gives the patient much needed rest.

The question of alcohol depends on the physician. It sometimes is necessary. In alcoholics it is useful. In small doses it may be used as a food. It may be used as a stimulant in depression.

Vaccines may be made from cultures and injected to increase the resistance of the patient. This may be useful if given early, but not so if given late.

Serum treatment depends on the typing. Typing is difficult and dangerous, as anaphylactic reactions may result. The polyvalent serum is often used. The results obtained are not sure. Type 1 serum gives good results, but types 2, 3, and 4 vary.

Oxygen is good in anoxemia. The funnel method is not good, and so oxygen, if given, should be given by means of a catheter passed through the nose into the larynx.

Fluids should be forced. Liver insufficiency may arise and sugar should, therefore, be given early to reduce delirium.

The paper was ably discussed by Drs. Gundrum, Lee Wilder, Lindsay, Babcock, Christman, Peers, and Bell.

The applications for membership of Drs. Dorothy Walsh Schallig and Irene Knox Mugford were read for the second time and were voted upon. Both were elected to membership.

There being no further business the meeting adjourned.

HANS F. SCHLUTER, *Secretary*.

✽

SAN BERNARDINO COUNTY

The San Bernardino County Medical Society held its monthly meeting at the Colton Hospital, in Colton, on November 5. The meeting was called to order at 8:10 p. m. Thirty-five members were present.

The minutes of the previous meeting were read and approved.

Dr. Darrell E. Hayhurst of Ontario was elected to membership.

A letter from the California Medical Association regarding a study to provide medical and hospital service for people whose income is less than \$2500 per year was read.

The program of the evening was then given:

Comparative Birth Customs of Primitive Peoples—Dr. Frank H. Pritchard, Colton. Discussion opened by Dr. C. F. Whitman.

Jaundice—Dr. W. W. Roblee, Riverside. Discussion opened by Dr. C. L. Curtiss.

The meeting adjourned at 10:20 o'clock.

E. J. EYTINGE, *Secretary*.

✽

SAN DIEGO COUNTY

A well-attended staff meeting of the Scripps Memorial Hospital was held October 21. After the discussion of hospital cases of interest, the meeting was treated to a report of research work in calcium metabolism in arthritis by Dr. E. F. F. Copp of the Metabolic Clinic. This report covered the detailed study of the intake and output of calcium in two cases of arthritis, one typical of atrophic, and the other of hypertrophic arthritis covering a period of many weeks. The report also dealt with the influence upon the calcium balance of the administration of several chemical agents throughout the experimental period. This work will shortly appear in the *Archives of Internal Medicine*.

The Mercy Hospital staff met October 15, with Doctor Fox presiding. The meeting was featured by an interesting paper by Dr. C. J. Osborne on the "Modern Treatment of Burns," which he preceded by a comprehensive analysis of all cases of burns treated in the hospital during the period. As a slight departure from the scientific program an attractive run

of moving pictures in color was shown by a Bell and Howell representative. Before adjournment it was decided, after some discussion, to experiment with the holding of the regular monthly staff meetings at 8 a. m. in place of 8 p. m.

At the meeting of the San Diego Academy of Medicine, November 5 and 6, Dr. Thomas Addis, associate professor of medicine at Stanford University, very interestingly presented "Newer, More Accurate and Simplified Diagnostic Methods in the Different Types of Nephritis." At the second meeting three cases were presented as typifying distinct clinical entities. Application of methods was made to these cases. Everyone was impressed with the simplicity with which Doctor Addis' methods could be applied, and all were in accord that it was a most instructive and helpful series of lectures.

At the recent annual meeting of the American College of Surgeons in Chicago, Dr. G. R. Stevenson and Dr. J. H. Young were elected to Fellowship.

ROBERT POLLOCK.

✽

SAN JOAQUIN COUNTY

The stated meeting of the San Joaquin County Medical Society was held Thursday evening at 8:30 o'clock, November 7, in the Medico-Dental Club, 242 North Sutter Street, Stockton.

The meeting was called to order at 8:30 o'clock by Dr. C. V. Thompson, president, presiding.

Twenty members were in attendance and two visitors, Doctors Weiss and Vanderleek of Stockton.

The minutes of the previous meeting were read and approved.

The committee appointed by the chairman to look over the books offered by Mrs. W. A. Vilas, widow of the late Walter Nathaniel Vilas, reported that they had accepted the books and that they would be placed in the library of the society as soon as the proper shelving had been put in, the expense of shelves to be met by the society. The committee consisted of H. S. Chapman, J. P. Hall, and B. J. Powell.

A communication from the California Medical Association relative to plans designed to provide medical and hospital service for people with incomes of less than \$2500 per year was read and ordered filed.

Doctor Hull presented a communication from James Cox, proprietor of the Acme Laboratories in the Bank of Italy Building, Stockton, pertaining to deep therapy treatment and the like.

Moved by Doctor Hull that the secretary transmit the letter to the Board of Medical Examiners at Sacramento for investigation whether a nonmedical man has the right to give deep therapy to patients. The motion was duly seconded and carried.

The secretary moved that the chair be authorized to appoint tellers for the election at this time and that the secretary be permitted to give the chairman of the tellers the ballots for counting at 12 o'clock noon on the day of election so that the results may be announced when the society meets at 7 p. m., December 5. The chair appointed Doctors Samuel Hanson, Percy C. Gallegos, and G. J. Vischi. The motion was seconded and carried.

The chair presented Dr. E. Best of San Francisco, who spoke briefly on the mechanisms of the various processes of digestion and the movements of the intestinal tract, and illustrated the movements by a movie film. He showed an Alvarez film, picturing the normal and abnormal action of the small and large intestine. This is a revelation in what films may do for the study of physiology.

The chair presented Dr. Samuel Hanson, who gave a brief discussion of a new pelvimeter for the measurement of the bispinous diameter:

"The importance of the bispinous diameter of the pelvis is now generally recognized," said Doctor Hanson. "A simple and accurate method for its measurement is, however, not yet available. In the methods hitherto proposed the attempt is made to reach both spinous processes simultaneously through the vagina. This is difficult to accomplish even under the most favorable circumstances. The problem is solved in the present method by the introduction of one arm of the instrument into the rectum while the

other arm is within the vagina. The instrument consists of two detachable curved blades, joined crosswise to resemble a pair of scissors. The curve of the left blade is such as to permit its ready manipulation within the vagina while the other blade is within the rectum. A ring is attached to that end of each blade which is to be used internally. The right blade carries a scale at the opposite end from the ring. The smallest divisions on this scale represent a distance of 0.5 centimeter between the rings. Method of procedure: The tip of the middle finger of the right hand is inserted into the ring of the left blade. With the blade in place the index and middle fingers are introduced into the vagina. The right blade is inserted into the rectum by means of the index finger of the left hand placed within its ring. The two blades are now locked, and the spinous processes are identified. The rings are then gently steadied against the spinous processes and a reading is made on the scale. The value obtained represents the distance in centimeters between the spines. The instrument can be applied very easily and almost painlessly even in the multiparous woman."

Both papers were discussed by members of the society and many questions asked, which the speakers answered in a practical manner.

There being no further business the meeting adjourned at 10:15 o'clock.

FRED J. CONZELMANN, *Secretary*.

✱

SANTA BARBARA COUNTY

The regular meeting of the Santa Barbara County Medical Society was held Monday evening, November 18, at the nurses' auditorium of the Cottage Hospital.

In the absence of President Brush, Vice-president Freidell called the meeting to order at 8:30 o'clock.

The minutes of the previous meeting were read and approved.

Dr. Mark A. Glaser of Los Angeles gave a most interesting and instructive talk on skull and brain injuries, illustrated with lantern slides.

The paper was discussed by Doctors Atsatt, Pierce, Schurmier, Thorner, Jones, Geyman, Lewis, and Spaulding.

Dr. Samuel Robinson was not present to give his paper on "The Surgery of the Large Intestine."

There being no further business the meeting adjourned.

WILLIAM H. EATON, *Secretary*.

✱

TULARE COUNTY

The meeting of the Tulare County Medical Society was held at Motley's Café, Visalia. Sixteen members were present for the dinner at 6:45 o'clock.

The meeting was called to order at 7:15 o'clock by President Furness, who also kept minutes of the meeting during the secretary's absence. (The secretary was unable to appear owing to an emergency call.

Doctor De Wees of Tulare was elected to membership.

The society's newly purchased stereopticon lantern was inspected and approved.

Dr. H. J. Templeton of Oakland gave a most interesting and instructive talk on the "Diagnosis and Treatment of the Cutaneous Neoplasms." His talk was illustrated with lantern slides, and demonstrations of the methods used. Following the talk, Doctor Templeton was extended a vote of thanks from the society and the secretary instructed to write same in the minutes.

H. G. CAMPBELL, *Secretary*.

CHANGES IN MEMBERSHIP

New Members

Alameda County—Clarence B. Hills and Albert K. Merchant.

Los Angeles County—

George K. Abbott	James Balfour McGuire
George Berger	William R. Owens
Linus H. Bittner	Vincent Joseph Quinn
Konrad Georg Burchardi	Frank O. Ringnell

William Franklin Carver	Bartlett C. Shackford
Robert E. Crusan	William Ellison Shattuc
Gregory Laurence Endres	Victor Ellsworth Thomas
	Rogers F. Wakefield

San Diego County—Hiram M. Presler.

San Francisco County—Phillis P. Bourne, Arnold S. Chaimov, Frederick Gary Dutton, Russell Fletcher, Ralph Arthur Reynolds, Emmett Earl Sappington.

Santa Clara County—Walter Henry Brown, William Herman Geisler, and Thomas F. Ayers.

Transferred Members

Romney M. Ritchey, from Napa to Los Angeles County.

S. Henrietta Frederickson, from Los Angeles to Sonoma County.

Deaths

Clark, Fred Pope. Died at Stockton, November 17, 1929, age 64 years. Graduate of Cooper Medical College, San Francisco, 1887. Licensed in California, 1887. Doctor Clark was a member of the San Joaquin County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Haggart, Fred Stuart. Died at Los Angeles, September 11, 1929, age 57 years. Graduate of Cleveland University of Medicine and Surgery, Ohio, 1897. Licensed in California, 1913. Doctor Haggart was a member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

Koons, Henry Hagus. Died at Los Angeles, October 23, 1929, age 62 years. Graduate of University of Pennsylvania School of Medicine, Philadelphia, 1897. Licensed in California, 1900. Doctor Koons was a member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

Smith, J. Wesley. Died at Los Angeles, November 1, 1929, age 72 years. Graduate of Denver College of Medicine, Colorado, 1895. Licensed in California, 1924. Doctor Smith was a member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

Townsend, Vinton Ray. Died at Long Beach, October 27, 1929, age 48 years. Graduate of University of Southern California College of Medicine, Los Angeles, 1909. Licensed in California, 1909. Doctor Townsend was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

Young, J. Audley. Died at Stockton, October 23, 1929, age 53 years. Graduate of Saginaw Valley Medical College, Saginaw, 1901. Licensed in California, 1904. Doctor Young was a member of the Stanislaus County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

OBITUARIES

Florence Mabel Holsclaw
1871-1929

The medical profession of San Francisco is poorer by the loss of a valued confrère, Florence Holsclaw.

It was Doctor Holsclaw's peculiar privilege to attract to her healing ministry children of every race, color, and station. Her funeral services afforded unique and deeply touching testimony of her all-embracing humanity, her passion for serving children. In the long line that filed by her bier, craving the sad satisfaction of a last look at their devoted friend, passed with weeping eyes, mothers, grandmothers, and children; some black of skin, some yellow; some clad in furs and silks; many, many, indeed, marked by the toil and stress of the struggle with circumstance. Rarely has San Francisco seen so deep, so spontaneous, so heartfelt a tribute to one whose life had gone. Literally her life was laid down in service to those she loved, the poor and the suffering.

For ten years past, every call Florence Holsclaw made, every consultation, every hour spent at the



Florence Mabel Holsclaw

Children's Hospital, every effort given to caring for the foundling babies she so lovingly tended at the Babies' Aid, or spent with the wards of the Associated Charities; in fact, every one of her multitudinous acts of service to the children of this community was made while she faced the threat of death and the certain knowledge that her strength was steadily growing less. And always she faced life and work with calm equanimity and unfaltering courage. Courage was the great outstanding quality that marked her. Courage and a passion for service to the poor, the helpless, and the abused.

Born in 1871, those who loved her are happy to feel that her own childhood and girlhood, passed in Gilroy, were years of unalloyed happiness. She entered Stanford University with the first class, going to it from the University of the Pacific. The world was still rosy for her, but suddenly, economic misfortune overtook her and she had to face life. She mustered to her aid that resilient courage that was so outstandingly hers, and she managed to put herself through medical school.

Among the achievements that satisfied her most was the founding of the sorority Kappa Kappa Gamma of Stanford, of which she was a charter member.

Doctor Holsclaw's approach to medicine was through the nursing profession, and many a surgeon can testify to the capability and efficiency that she displayed as chief operating nurse at the old Waldeck Hospital, then a notable institution in the medical life of San Francisco. Her career as a nurse enabled her to finance herself as a medical student and she gained her M. D. degree at Cooper Medical College in 1907. That same year she joined the staff of the pediatric department of Stanford University Medical School.

Her industry and her great ability brought her prompt recognition, and in rapid succession she was entrusted with the care of the foundling infants of the Babies' Aid and the boarded-out children of the Associated Charities, and was given charge of the clinics for these at the Health Center of the Collegiate Alumnae. These activities Doctor Holsclaw never relinquished. By devotion and understanding she built

up and improved these services to such a degree that today they are recognized as second to none in this country. She became in truth a mother to motherless little ones, sacrificed her comfort and her health with all a mother's fierce willingness to do for her babies. And in her ministrations to these she taught and developed a number of splendid younger medical women who, she was happy to know, could and would carry on her service to children with devotion and high ideals.

In 1914 Doctor Holsclaw joined the staff of the Children's Hospital, and she had risen, at the time of her death, to be chairman of the department of pediatrics and chairman of the staff in the Children's Hospital. Her pride in that institution went hand in hand with her devotion to the sick and friendless babies of the community.

In 1918 the University of California induced Doctor Holsclaw to join its teaching staff as instructor. Her keen clinical sense and sound teaching methods rapidly brought her recognition that was expressed in promotions, so that in 1928 she was made clinical professor of pediatrics.

There are some lines written by Charles Singer estimating the physician Hippocrates, that any who knew Doctor Holsclaw will agree might justly be applied to her: "Learned, observant, humane, with a profound reverence for the claims of his patients, but an overmastering desire that his experience shall benefit others; orderly and calm; grave, thoughtful, reticent, pure of mind and a master of his passions."

Florence Holsclaw is gone; the profession has lost a fine clinician, a sound teacher, a loyal upholder of its best traditions. Her friends have lost a friend in the best sense of that word; her patients an assiduous, understanding, devoted physician; those little ones who are friendless and homeless and parentless, a mother heart and a protecting care.

There is a promise written: "Inasmuch as ye have done it unto the least of these, ye have done it unto Me." It is a promise that brings much of hope and of comfort to those who labored with Florence Holsclaw and who valued her. For, surely, if any one since the Galilean has labored lovingly with "the least of these," that noble woman did.

LANGLEY PORTER.

* * *

Daniel Franklin Royer 1852-1929

Daniel F. Royer was born in Waynesboro, Pennsylvania, March 21, 1852. Ancestry, French and English Colonial. Education, public schools and state normal. After graduation taught school four years, then studied medicine at Jefferson Medical School, taking his M. D. degree in 1875.

Doctor Royer began his successful and adventurous career in Alpina, South Dakota. Was Indian agent at Pine Ridge during the eventful days of Sitting Bull. Served two terms in the Dakota legislature, during a part of the last session acting as speaker.

He was in the very prime of life when he came to Orange in 1896, and immediately became prominent in civic and medical affairs. Obtained his California certificate in 1897 and was admitted to the Orange County Medical Association in 1898, and later to the California Medical Society. At the time of his death he was a Fellow of the American Medical Association. For many years he had a very extensive practice. During the World War he was the medical member of the local draft or exemption board. Was local surgeon for the Southern Pacific, Santa Fe, and Pacific Electric railways.

Notwithstanding his busy life as a general practitioner in medicine, he found time to become interested in civic affairs. He was a member of the Orange City Council for six years and a mayor of the city two years.

Doctor Royer was a member of the Christian Church, a Mason, an Oddfellow, and an Elk.

He died at the home of a daughter in Long Beach, surrounded by his relatives, three daughters, and grandchildren, on October 28, 1929, aged 79.

NEVADA STATE MEDICAL ASSOCIATION

W. A. SHAW.....President
 R. P. ROANTREE, Elko.....President-Elect
 H. W. SAWYER, Fallon.....First Vice-President
 E. E. HAMER, Carson City.....Second Vice-President
 HORACE J. BROWN.....Secretary-Treasurer
 R. P. ROANTREE, D. A. TURNER,
 S. K. MORRISON.....Trustees

OFFICIAL NOTICE

The twenty-sixth annual meeting of the Nevada State Medical Association was called to order at Elko at 9:40 a. m., September 27, 1929, with President R. R. Craig in the chair.

The presidential address was largely a speech of welcome to our members and visitors.

C. E. Secor, made a number of announcements concerning the various entertainment features planned by the local committee. The scientific program was then taken up.

Scientific Session

Miley B. Wesson, San Francisco, read a very excellent paper on "Diseases of the Prostate and Their Treatment." Discussed by W. Schulte and R. C. Coffey. Discussion closed by Doctor Wesson.

Chauncey D. Leake, San Francisco, gave an address on "Recent Advances in Pharmacology. Discussed by H. R. Hartman, M. B. Wesson, W. Schulte, A. R. Kilgore, and R. Tandowsky. Doctor Leake closed.

B. C. N. O'Reilly, San Francisco, read a very interesting paper entitled "Differentiation of Yaws and Syphilis." Discussion by M. Critchlow and C. D. Leake. Doctor O'Reilly closed.

Thomas W. Bath, Reno, read a masterly paper on "Endocervicitis—Etiology, Pathology, and Treatment." Discussed by J. H. Woolsey, W. M. Edwards, W. A. Haas, and C. E. Piersall. Doctor Bath closed.

This completed the scientific session for the day and after a short recess the president called the members to order.

Business Session

The president called for the reading of the minutes of the last annual meeting. Moved by D. A. Turner, seconded by S. K. Morrison, that reading of minutes be dispensed with. Motion carried.

The report of the delegate to the American Medical Association was then called for and read. Report unanimously adopted on motion of D. A. Turner, seconded by E. R. Creveling.

Medical Practice Act.—E. E. Hamer, secretary of the State Board of Medical Examiners, was granted the floor and explained in detail about the amendments to the Medical Practice Act, passed by the last legislature, speaking especially on the purpose of the annual fee of \$2 now required of each licentiate.

Amendment of By-Laws.—Thomas W. Bath moved, seconded by E. L. Creveling, that the by-laws be amended to read that the retiring president shall install his successor on the last day of each annual meeting; and that the secretary be instructed to write such amendment into the by-laws. Carried.

The secretary presented the names of several applicants for membership, and upon motion by Horace J. Brown, seconded by E. L. Creveling, they were elected to membership.

The resignation of W. W. Cook, formerly of Ely, but now of Pasadena, California, from membership was read and accepted unanimously on motion of D. A. Turner, seconded by E. L. Creveling.

Thomas W. Bath moved, seconded by J. E. Worden, that a vote of thanks be given to E. E. Hamer and Horace J. Brown for their efforts to better conditions of the profession in this state. Carried.

Thomas W. Bath moved, seconded by J. E. Worden, that a vote of thanks be given Horace J. Brown for his untiring efforts in behalf of the association. Carried.

The application for a charter from the White Pine Medical Society was read and, upon motion by

Horace J. Brown, seconded by E. L. Creveling, it was voted to grant a charter to that society.

E. L. Creveling moved, seconded by C. E. Piersall, that all of the visiting essayists be elected to honorary membership in this association. Carried.

Election of officers for the ensuing year being in order, the following were duly nominated and elected: President-elect, R. P. Roantree, Elko; first vice-president, H. W. Sawyer, Fallon; second vice-president, E. E. Hamer, Carson City; secretary-treasurer, Horace J. Brown, Reno; and trustee for three years, D. A. Turner, Reno.

The selection of a meeting place for 1930 being in order, it was moved by D. A. Turner, seconded by E. L. Creveling, that the next annual meeting be held at Bowers' Mansion. Carried.

Thomas W. Bath moved, seconded by E. L. Creveling, that a vote of thanks be given the Elko County Society for the excellent manner in which they had entertained the Society. Carried unanimously by rising vote.

A recess was then taken until 9 a. m. of September 28.

* * *

Second Meeting

The meeting was called to order at 9:35 a. m. by the president, and the scientific program immediately resumed.

Howard R. Hartman, Rochester, Minnesota, read a classical paper on "The Medical Treatment of Ulcer of the Stomach and Duodenum." Discussed by J. H. Woolsey, F. R. Fairchild, J. Z. Brown, R. Tandowsky, B. C-N. O'Reilly, R. C. Coffey, and Albert Soiland. Doctor Hartman closed.

John Homer Woolsey, San Francisco, read an excellent paper on "Surgical Aspects of Duodenal and Gastric Ulcer."

Fred R. Fairchild, Woodland, California, read a masterful paper on "A Discussion of the Complications Following the Surgical Treatment of Peptic Ulcer." The papers of Doctors Woolsey and Fairchild were discussed by A. R. Kilgore, R. C. Coffey, and M. B. Wesson. Doctors Woolsey and Fairchild closed.

Robert C. Coffey, Portland, Oregon, closed the scientific program with a highly instructive and entertaining discussion on "Discussion of Cancer and Its Treatment." This address, given in Doctor Coffey's usual brilliant style, proved to be one of the best features of the meeting. Discussion was by Thomas W. Bath, J. Z. Brown, C. E. Piersall, and A. R. Kilgore. Doctor Coffey closed.

There being no further business the meeting adjourned *sine die*.

* * *

The following members were in attendance at various times during the meeting: D. A. Turner, Horace J. Brown, H. W. Sawyer, John E. Worden, L. B. Sandall, R. S. Tillotson, Wales A. Haas, E. E. Hamer, E. L. Creveling, S. K. Morrison, W. H. Hood, C. E. Secor, H. E. Belknap, C. W. Eastman, J. R. Eby, R. R. Craig, W. M. Edwards, W. A. Shaw, R. P. Roantree, A. J. Hood (Elko), C. E. Piersall, Thomas W. Bath, and G. R. Smith.

The following honorary members and visitors were also present at various times during the meeting: Miley B. Wesson, Chauncey D. Leake, John Homer Woolsey, B. C-N. O'Reilly, Thomas Welsh, F. A. Cutter, W. W. Wiley, T. D. McCall, W. G. Schulte, M. Critchlow, R. Tandowsky, S. G. Kahn, F. H. Morton, John Z. Brown, J. B. Rackerby, A. Soiland, F. Fairchild, Foster J. Curtis, E. D. Le Compte, Howard Hartman, B. J. Lasswell, R. C. Coffey, D. L. Alexander, and A. R. Kilgore.

HORACE J. BROWN, *Secretary*.

NEVADA NEWS

Erratum.—Attention has been called to an error that appeared in the October issue whereby the name of Dr. A. J. Hood was published as having been elected president of the Pacific Association of Railway Surgeons. The name of the member so honored is Dr. W. H. Hood of Reno.

UTAH STATE MEDICAL ASSOCIATION

H. P. KIRTLEY, Salt Lake City.....President
 WILLIAM L. RICH, Salt Lake City.....President-Elect
 M. M. CRITCHLOW, Salt Lake City.....Secretary
 J. U. GIESY, 701 Medical Arts Building,
 Salt Lake City.....Associate Editor for Utah

COMPONENT COUNTY SOCIETIES

SALT LAKE COUNTY

The regular meeting of the Salt Lake County Medical Society was held on Monday, October 14, at 8 p. m., at the Holy Cross Hospital.

The meeting was called to order at 8:05 o'clock by President C. M. Benedict. Forty-five members and fourteen visitors were present.

Minutes of the meetings of September 9 and 23 were read and accepted without correction.

The following clinical program was presented by the hospital staff, conducted by G. N. Curtis:

Aortitis, R. M. Tandowsky; Bullet in the Brain, J. J. Galligan; Sarcoma of the Tibia, J. J. Galligan, J. P. Kerby, and T. A. Flood; Heart-Block, John Sugden; Brain Abscess Following Frontal Sinusitis, W. D. Donohoe, F. B. Bailey, and E. D. LeCompte; Palliation of Metastatic Carcinoma by X-ray Therapy, J. P. Kerby; Osteomyelitis of the Os Calcis, W. T. Ward.

* * *

Acceptance of the report of the committee on the Salt Lake City Hourly Nursing Service was postponed until the next meeting. J. P. Kerby moved that all other than urgent business be carried over until the next meeting. Seconded and carried.

Communication from the Radium Corporation of Utah was read regarding the method of disposition of the stock of that corporation held by the late Community Clinic. This was briefly discussed by John Sugden. William F. Beer moved that the president appoint a committee of three to investigate this communication and report on it at the next meeting. Seconded and carried. President C. M. Benedict appointed the following committee: M. M. Critchlow, chairman; G. N. Curtis and J. C. Landenberger.

President C. M. Benedict announced that at the next meeting there would be a report from the Special Committee studying means by which a reduction in the number of medical meetings can be obtained.

The transfer card from the Olmstead County Medical Society of Olmstead, Minnesota, regarding Dr. T. A. Clawson, Jr., was read and turned over to the board of censors.

Meeting was adjourned at 9:45 o'clock.

* * *

The regular meeting of the Salt Lake County Medical Society was held at the Newhouse Hotel Monday, October 29.

The meeting was called to order at 8:10 p. m. by President C. M. Benedict. Twenty-nine members and three visitors were present.

No clinical cases were reported.

The following clinical program was presented:

"Low Back Pain" by A. L. Huether and "Back Injury" by J. E. Tyree. These two papers were ably discussed by S. C. Baldwin, L. N. Ossman, M. C. Lindem, L. C. Snow, R. T. Richards, H. C. Holbrook, J. P. Kerby, F. M. McHugh, and C. Young.

The special committee to investigate the Salt Lake City Hourly Nursing Service, consisting of C. M. Benedict and B. E. Bonar, recommended that the Salt Lake County Medical Society go on record as encouraging this institution. J. Z. Brown moved that the report of the committee be accepted. Seconded and carried.

The special committee to consider the proposal of the Radium Corporation of Utah was read by M. M. Critchlow, chairman. The committee was unanimously in favor of accepting the proposition of the Radium Corporation. J. Z. Brown moved that the

report be accepted and that it be suggested that the members to be appointed from each hospital be a member of the medical staff. This was discussed by William F. Beer, M. C. Lindem, F. M. McHugh, C. Young, E. F. Root, G. N. Curtis, M. M. Critchlow, and J. P. Kerby. After a rather heated discussion, William F. Beer finally moved that the motion to accept the report be tabled until next meeting, with instructions to the committee to interview the Radium Corporation again and to report later. This motion was accepted, and carried by a rising vote of 11 to 8. William F. Beer moved that a special meeting be called to consider this question. There was no second.

A letter from B. I. Burns, dean of the University School of Medicine, recommending that the society change the constitution and by-laws so that certain nonmedical teachers at the Medical School might become associate members was read. The secretary read a communication from Olin West, secretary of the American Medical Association, relative to associate members in component medical societies in which it stated that such memberships had been provided for in certain county societies.

J. Z. Brown moved that the question be referred to the board of censors for investigation and recommendation. Seconded and carried.

M. C. Lindem suggested that the secretary be instructed to ask Dean Burns to furnish the names of such members of the medical department of the University of Utah who might qualify for an associate membership.

The secretary made a special announcement that the next meeting of the society would be a banquet for H. Claire Shepardson of San Francisco on November 11 at the Newhouse Hotel at 7 p. m. Doctor Shepardson will read a paper on "Diabetes."

BARNET E. BONAR, *Secretary*.

UTAH NEWS

The Academy of Medicine held three of the regular weekly meetings during October. The fourth was canceled because of local convention activities which made it inadvisable to try to hold any formal program.

On October 10 Doctor Viko gave a paper on the "Practical Value of Electrocardiography," and Doctor Tyndale reviewed the *Archives of Internal Medicine* for September.

On October 17 Doctor Hunter spoke of his experiences in the European hospitals during his recent trip abroad.

The meeting of the Holy Cross Hospital Clinical Association for October was merged with that of the Salt Lake County Medical Society, and a general clinical meeting was arranged by the hospital staff.

OBITUARY

George L. Smart, 1863-1929

Dr. George L. Smart, prominent Utah art collector and founder of the Springville Art Institute, died Friday morning at a local hospital, following a brief illness with pneumonia. He was stricken Tuesday.

Doctor Smart was noted as an art critic in the West and possessed a valuable collection of paintings. When the Springville Institute was founded the doctor donated a collection valued at more than \$25,000. He had continued active association with the institute as a member of the board of trustees.

Born in London, Doctor Smart came to America with his parents at the age of five, in 1868. The family settled in Salt Lake. Following attendance at the Brigham Young University in Provo, Doctor Smart was given his medical degree in Ohio, and returned to Utah to begin his practice.

He worked for many years in Provo, American Fork, and Springville before moving to Salt Lake. He then took up residence at 237 Seventh East Street, devoting himself to his practice.

Surviving are his widow, Katie Peterson Smart; a daughter, Katherine Elizabeth; two brothers, Fred Smart of Salt Lake and Ralph Smart of Springville, and two sisters, Mrs. Ethel Lobb and Orena Smart, both of Salt Lake.

MISCELLANY

Items for the News column must be furnished by the twentieth of the preceding month. Under this department are grouped: Comment on Current and Recent Articles in the Journal; News; Medical Economics; Correspondence; Department of Public Health; California Board of Medical Examiners; and Twenty-Five Years Ago. For Book Reviews, see index on the front cover, under Miscellany.

NEWS

Extension of New York Polyclinic.—The New York Polyclinic Medical School and Hospital announces that it has started wrecking the four buildings adjoining the hospital, and will erect a ten-story building for an out-patient department, transferring the clinical space in its present building to the new building, thereby enlarging its wards so that it can take care of another 150 ward patients for teaching purposes.

The Polyclinic Hospital maintains one of the largest out-patient departments in New York City. The enormous growth of New York City in this central district served by the polyclinic has made it absolutely essential that it provide increased quarters for its clinical work.

The new building will be devoted to postgraduate teaching and will be fully equipped for all branches of medicine and surgery.

Fifth International Congress of Physiotherapy.—International Congress of Physiotherapy will meet at Liege from the 4th to the 8th of September, 1930.

The Congress will be presided over by Professor Gunzburg and Professor De Munter, who have already received recognition by twenty foreign committees.

The important questions proposed are: (a) Rheumatism and physiotherapy treatment. Papers by Professors Gunzburg for Belgium, Van Breemen for Holland, Wierzejewsky for Poland. (b) Affections of the Central Nervous System and Physiotherapy. Paper by Doctor Delherm for France.

Acceptance may be sent from now on to Doctor Dubois-Trepagne, Secretary-General, 25 Louvrex Street, Liege, Belgium, with the dues of 150 Belgium francs. This will facilitate the organization of a Congress which will be noteworthy among the sessions of 1930.

Exhibition of Portraits of Physicians and of Scientists in the Medical History Room at the Lane Library, December 2-14, 1929. A large collection of line engravings, etchings, lithographs, mezzotint portraits of illustrious medical men and of those responsible for the development of modern science. From the collection of Professor Herbert M. Evans and William J. Kerr, M. D., of the University of California.

Fire at the University of California Hospital.—That the fire which occurred in the x-ray department of the University Hospital last month was not a sad repetition of the Cleveland disaster was entirely due to the precautions which had been taken immediately thereafter to prevent such possible recurrence. Only films in use during any one day are kept in the x-ray department. All others are stored in an outside fire-proof storage vault. Provision also had been made for a free ingress of air in the event of fire, which would permit proper oxidation and thereby avoid the possibility of explosion with consequent liberation of deadly gases.

The fire at the University of California Hospital was simply a fire—there was no explosion of any sort.

Dr. Lionel Schmitt, Acting Dean of the University of California Medical School, states that even the possibility of fire will be eliminated hereafter by the use of non-inflammable films, which, it is hoped, in the near future will be so perfected as to equal in value the present inflammable films.

The criticism that followed the lurid newspaper account of the occurrence makes it advisable to

apprise members of the profession of the actual facts in this case, that the undue fear instilled in the minds of patients of a possible fire hazard in hospitals may be intelligently combated.

Committee of Revision of the Pharmacopoeia of the United States of America 1920-1930.—The extent of present day use of deleted Pharmacopoeial drugs is one of those decennial questions which always causes some discussion when the time for a new Pharmacopoeia approaches. A number of efforts have been made in the past to secure exact facts upon which to base correct judgments for the U. S. P. scope and again an appeal is made to physicians, for help in making such a study.

Copies of a questionnaire, indicating the opinions of physicians concerning medicinal products which are official in the last revisions of the U. S. P. will be g'adly sent by the chairman of the Committee of Revision to anyone who is interested. Write E. Fullerton Cook, 636 South Franklin Square, Philadelphia, Pa.

CORRESPONDENCE

Subject of Following Letter: Vienna Clinics

Vienna, Austria,

October 24, 1929.

To the Editors.

California and Western Medicine.

A brief review of some of the activities of the Vienna clinics will probably be of interest to the readers of CALIFORNIA AND WESTERN MEDICINE. The postwar vicissitudes this poor country has experienced have not apparently decreased the importance of Vienna as a great medical center. Visiting it for the first time since the war, I had anticipated defects in organization, as compared to the smoothly running machinery I had observed in prewar periods. Such was not the case, however. The various institutions which go to make up the Vienna Medical School are all apparently functioning normally, and, save for evidences here and there of economy in administration, seem to be working with the same efficiency as they did before the war. The vast amount of clinical material is bewildering. The Allgemeines Krankenhaus, with its two thousand beds, is but the nucleus of material. With the affiliated institutions, such as the Allgemeine Polyclinic, the Heart Station, the medical, gynecological, and nose and throat clinics near by, and further from the center, the Franz Josef Spital, the Jubiläums Spital, the Kinder Krapfen Institute, the Wilhelminen Spital, and many others too numerous to mention, is presented a clinical mass of about twenty thousand beds for teaching purposes. In addition to this, the Landenstatten Am Steinhof (Hospital for the Insane) four thousand beds, and the seven thousand beds of the Home for the aged, supply ample material for pathological teaching.

It will thus be seen that pathological material for teaching purposes is very great. Vienna has always afforded exceptional facilities for the study of pathology. Frankl's course at the Frauen Klinik is most comprehensive, as he is the foremost man in Central Europe in his field; large numbers attend his classes.

Erdheim, at the Jubiläums Spital, is a teacher in pathology of rare ability. He has been active in the department of pathology here for twenty-eight years, and has collected a mass of records and statistics unequaled elsewhere in the world. It is estimated that his experience covers approximately eighty thousand

autopsies, and his records, being well kept, the statistics are most valuable.

The Pathological Institute has perhaps the finest collection of pathological specimens to be found in the world. It consists of between 5000 and 10,000 specimens, some of them dating back one hundred years.

Of the clinics for internal medicine, the Wenckebach Clinic is probably most famous for its work in the field of cardiovascular diseases. Wenckebach, himself, a leader in the field of cardiology, has gathered a brilliant coterie of men in his department. Scherf, a young man of thirty years, yet one of the keenest cardiologists I have ever met; Porges, Hitzenberger, Elias, are all clinicians of great ability, and rare diagnostic acumen. The personnel of this department is somewhat depressed at present because of the loss of their chief, Wenckebach, who retired from teaching work on October 1. At the present writing the name of his successor has not been announced.

The clinic of Professor Luger (formerly of Peter Bent Bingham Hospital in Boston) in the Ortner Clinic is very popular with Americans, as is, of course, the Chrostek and Kovacs clinics. Kovacs is probably one of the most brilliant of the teachers in internal medicine. At the Heart Station the work of Dressler engages the attention of a great many American students. His demonstrations are well presented both in clinical cardiology and electrocardiography.

In this same institution the brilliant fluoroscopy of the heart by Rosler must be mentioned. He is a man of rare ability, deservedly popular as a teacher. He has a wonderful collection of films illustrating congenital hearts, and his interpretations of the screen picture are most interesting and instructive. No less should be also said of Zdansky in the Wenckebach Clinic, in the x-ray examinations of chests.

The chief work in tuberculosis is found at the Wilhelminen Spital in the clinic of Professor Neumann. There abundant opportunity is afforded the student to study the methods of Neumann, who is the outstanding man in this department of medicine in Vienna. The principles underlying the treatment of tuberculosis are the same here as elsewhere, except that there is a much greater appreciation of the value of tuberculin in therapy than exists in the clinics and among the practitioners of the United States. Artificial pneumothorax is freely employed, and frequently in quite early cases. Phrenectomy is employed to a great extent. Thoracoplasty is not very much used. Neumann does not favor it because of the very high attendant mortality. The "lungenplombe" operation, revived by Denk, now in Graz, and Hauke of Breslau, has found an enthusiastic advocate in Neumann.

This operation consists in resection of the second rib in the interscapular space, separation of the parietal pleura from the thoracic wall, and extrapleural compression by means of a paraffin mass. I have seen cavitation extending throughout the upper lobe satisfactorily compressed by this means. Its advantage over the extensive thoracoplasty consists in a mortality which is practically nil, and the fact that remaining functioning lung tissue is not permanently made useless, as is the case with the more formidable surgical procedure. It is rather interesting and significant that, when in Berlin two months ago, I found the "lungenplombe" operation much in use at the Sauerbough Clinic.

This rather sketchy review of the clinical facilities of the Vienna school reveals the fact that abundant opportunity is presented to the postgraduate for study. Is this wealth of material being used to the best advantage? Much of it is the usual material presented to the casual medical man—presented largely by instructors who have learned enough in English to be understood by their classes; and when I say the casual medical man, I am clothing with the mantle of charity the qualifications of a considerable number of Americans at the Vienna school. A great many of these courses are very elementary, and much of the really scientific work is entirely overlooked by those who are apparently here to "brush up." For instance

I spent yesterday morning with Doctor Hitzenberger, of the Wenckebach Clinic, who is carrying on, under a grant from the Ella Sachs Fund, a most interesting research on the gas content of the venous and arterial blood in cardiovascular diseases. I was the only American present!

By this I do not mean that thorough work is not being done by a great many earnest, well-trained men who come here to do conscientious work. There are large numbers of such men here, and the experience of such men under the influence of the Vienna school has greatly enriched American medicine in the past.

There is much to be done in the way of better organization of the work for presentation to the post-graduate. This the American Medical Association of Vienna is now trying to do by the arrangement of intensive courses in the various departments of medicine, which arrangements, when completed, can be announced at home to prospective visitors through the medium of our medical journals.

Very truly yours,
GEORGE H. EVANS.

Subject of Following Letter: Los Angeles "Wine Tonic" Ordinance

Los Angeles,
November 7, 1929.

To the Editors:

Herewith find copy of a recent so-called wine tonic ordinance passed by the city council of Los Angeles, and in the same or modified form now up for consideration before the councils of several other California cities. On its face the ordinance would seem to be a violation of professional rights of physicians, since no exemption is made for prescriptions of any kind. The ordinance should be of interest to the many physicians who believe that professional rights should be protected and is worthy of perusal by all physicians. The ordinance as passed is enclosed.

Very truly,
WILLIAM DUFFIELD, M. D.

* * *

Ordinance No. 65,112

An ordinance prohibiting the sale of wine tonics in the city of Los Angeles.

The people of the city of Los Angeles do ordain as follows:

Section 1. Definition—Wine Tonics: The phrase "wine tonics" shall mean and include any tonic or any medicinal preparation containing one-half of one per cent or more of alcohol by volume, which is capable of being used as a beverage.

Section 2. It shall be unlawful for any person, firm or corporation to sell, serve or give away within the city of Los Angeles any wine tonic or wine tonics, as defined in Section 1 hereof.

Section 3. That any person, firm or corporation violating any of the provisions of this ordinance shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not to exceed Five Hundred (\$500) Dollars, or imprisonment in the city jail for a period of not exceeding six (6) months, or by both such fine and imprisonment.

Every such person, firm or corporation shall be deemed guilty of a separate offense for each violation of any provision of this ordinance which is committed, continued or permitted by such person, firm or corporation, and shall be punishable therefor as provided by this ordinance.

Section 4. The city clerk shall certify to the passage of this ordinance and cause the same to be published once in the Los Angeles *Daily Journal*.

I hereby certify that the foregoing ordinance was introduced at the meeting of the council of the city of Los Angeles of October 16, 1929, and was passed at its meeting of October 23, 1929.

ROBT. DOMINGUEZ,
City Clerk.

Approved this twenty-fourth day of October, 1929.
JOHN C. PORTER,
Mayor.

TWENTY-FIVE YEARS AGO*

EXCERPTS FROM OUR STATE MEDICAL JOURNAL

Vol. II, No. 12, December 1904

From some editorial notes:

... *Second Volume.*—With this issue the Publication Committee hands you the closing number of the second volume of your journal. It is by no means, as yet, fully the journal your committee would have it, but we feel that it is a pretty good journal and that you need not be ashamed of it. It is clean from cover to cover, so far as we know; it has not deviated one particle from the line marked for it; we have refused to print page after page of advertising that did not conform to the "Principles of Ethics of the American Medical Association." Were we to interpret these "principles" as loosely as have the trustees of the American Medical Association, very many dollars could have been added to the revenue of the society; but your committee would not. The work has not been easy and we have often fallen far short of our desired result, but we have given you of our very best, and no man can do more. . . .

... *Unkind Slander.*—It is true that your Publication Committee and your Council, through the pages of your journal, have called the attention of the trustees of the American Medical Association to certain of their methods in conducting the *Journal of the American Medical Association* which do not seem to conform to medical ethics as promulgated by the Association; but this is far different from an "attack" based upon and due to nothing more substantial than a "factional" feeling. We feel quite sure that no body of physicians in this country have a more deeply rooted affection for the American Medical Association. So proud are we of it and so much has it grown to mean to us that we cannot bear to see it doing even the least little thing that seems inconsistent with the very best and highest in medicine and medical ethics. . . .

... *Watch the Legislature.*—Elsewhere in this number of the journal will be found a list of the gentlemen who have been chosen to make and unmake and amend the laws of the State of California for the session beginning January 1, 1905. Study this list carefully. Bring up the matter in your county society, and discuss the personnel of the men from your section of the state. . . .

From a letter in the Correspondence Column:

... For at least five years, quiet, personal, effort had been made by others to induce the *Journal of the American Medical Association* to become decent, but without result; no one would speak out, and little could be done when all other medical journals in the land could point to the official organ of the physicians themselves as excuse for advertising absolutely rotten, vile, and worthless stuff, nostrums, etc., *ad nauseam*. The editor expected to get plenty of abuse, and he has not been disappointed; some of it has approached pretty close to personal slander. Fortunately for him, every step taken, every matter of policy, every decision connected with the advertising question has been gone over by the whole Publication Committee. . . .

From the minutes of the California Academy of Medicine:

... Meeting held in San Francisco, October 25, 1904. The president, Dr. T. W. Huntington, being in the chair. . . .

... Remarks on the diagnosis and treatment of fractures of the neck of the femur.

Dr. H. H. Sherman reported several cases of in-

* This column aims to mirror the work and aims of colleagues who bore the brunt of state society work some twenty-five years ago. It is hoped that such presentation will be of interest to both old and recent members.

juries about the hip which illustrate the importance of a special symptom, viz., the inability of the patient to lift his foot off the table when lying on his back. . . .

From the minutes of county medical societies:

... *Redlands Medical Society.*—The regular monthly meeting of the Redlands Medical Society was held in the Y. M. C. A. parlors on Wednesday afternoon, October 19, 1904. The members present were Doctors Evans, Browning, Tyler, Pounds, Strong, Major, Payton, Taltavall, Moseley, Wheat, Blythe, Sanborn, and Shreck. . . .

... *Fresno County.*—For the enlightenment of the journal readers, I will state that Dr. — is the president of our society and has always been a much-respected and popular member. Recently Dr. — has equipped his offices with a static machine, Finsen light, hot-air ovens, vibrating apparatus, etc., and has styled his offices a "Therapeutic Institute," and used the daily papers to a marked extent in giving publicity to these features. This procedure was frowned upon by many members of the society as going beyond the bounds of ethics. . . .

... *San Joaquin County.*—The last meeting of the San Joaquin County Medical Society was held at the office of Dr. Barton J. Powell. Two cases of hemorrhage after tonsillotomy were reported. One case was of especial interest, being that of a healthy boy of fifteen of good family history. The hemorrhage was controlled with a tonsillar tourniquet and patient discharged. One week later another hemorrhage occurred, but was checked with epinephrin solution without pressure. The patient rapidly regained his normal condition. The case was freely discussed and the value of the tourniquet in these very occasional cases appreciated. The value of the snare over the tonsillotomy brought out liberal discussion. . . .

... *San Francisco County.*—Meeting called to order at 8:45 p. m., November 8, the president, Doctor Rosenstirn, in the chair. . . .

... Dr. S. G. Nagel presented a case of amblyopia from wood alcohol poisoning, and said: "Maybe some of you have noticed a report by Dr. Casey Wood of serious results following ingestion of wood alcohol. . . ."

... Doctor Barkan said, in discussion: "In relation to this case presented by Doctor Nagel, I will simply say that it is indeed a very interesting one, and the first I have seen. They are not very frequent here. I am much obliged to Doctor Nagel for this opportunity to observe a case of this sort. . . ."

... Dr. S. J. Gardner presented some clinical notes on "An Unusual Infection in the Bones of the Foot."

Doctor Gardner said: "We wish to show the specimen of this case as it is one of unusual interest, especially to California physicians. A formal report will appear at some later time, as we are doing some work that will take considerable time and we do not wish to report the case formally until this work is completed. . . ."

"... In the tissues the parasite is similar to that first described by Wernicke in 1892; and to that described by Rixford and Gilchrist in their cases of so-called 'protozoan infection,' appearing in the *Johns Hopkins Hospital Reports* for 1896. The parasite has a coccidium-like appearance, being about five to twenty-five microns in diameter. . . ."

... Doctor Ophüls said: "If I may, I should like to say a few words on this very interesting subject. It seems to me that this affection is almost entirely limited to California. There is only one case reported in literature outside of California and that one occurred at Buenos Ayres in the Argentine Republic. Lately a similar case seems to have been observed in Boston. All cases except these, so far as known, have had their origin in California, and most of them in the San Joaquin Valley. As far as the parasite is concerned, it was as Doctor Halton has said, first regarded as a protozoan. . . ."

DEPARTMENT OF PUBLIC HEALTH

By W. M. DICKIE, M. D., *Director*

Undulant Fever.—(By J. C. Geiger, M. D., George Williams Hooper Foundation for Medical Research, University of California, San Francisco).—The significance of the problem of undulant fever to the clinician and to the public health worker has been stressed to such an extent that this article has been prepared in order that some of the now known facts be made available. There is, of course, another reason for this article in that the practicing physician may be stimulated to scrutinize most carefully such cases as may resemble the disease. At the very beginning it may be necessary to call attention to the statement of Evans, for in this disease, as perhaps in no other, the laboratory may offer decided help to the oftentimes puzzled and thoughtful clinician. This author states that "there is no disease in which the physician is more dependent upon laboratory findings for a correct diagnosis. The symptoms are various, indefinite and suggestive of other diseases, particularly typhoid fever, malaria, tuberculosis, and rheumatism." To these diseases may now be also added focal infections, sinusitis, appendicitis and tularemia. In many diseases certain symptoms can often be spoken of as classical. Undulant fever, however, has not this distinctive characteristic at this moment. The habitual careful clinical observer may note, as first symptoms, a weakness, generalized in type, usually occurring in the afternoon and accompanied by headache and muscular pains. Fever and chills may precede the above symptoms or actively accompany them. Profuse perspiration is frequently noted with or without exertion and oftentimes very apparent while in bed. The amount of temperature is variable, but quite high in some cases. Its daily irregularity may be a warning to guide in a diagnosis. The temperature may completely subside, to be followed within a few days by another wave. This febrile series of waves may last for some time. The blood picture is that of anemia, perhaps a slight leukopenia and lymphocytosis. Joint symptoms are usually present even to the extent of interference with movement. Constipation is not infrequent along with a decided irritability accompanied by insomnia. Such complications as orchitis, epididymitis, and prostatitis have been noted in the male. Abortion in pregnant women has been attributed to this disease.

As far as America is concerned undulant fever is comparatively a newly recognized disease. The first case was reported by Craig about twenty-four years ago. The endemicity of this disease is now an argumentative point. Therefore physicians are urged to report their suspicious cases and confirm their diagnosis by suitable laboratory tests.

The available evidence indicates that the causative organisms are of three general types, and usually classified as to host. The variety known as *Brucella melitensis* ordinarily prefers the goat; *Brucella abortus* (Bang) ordinarily prefers the cow; and *Brucella abortus* var. *porcine*, ordinarily prefers the hog. Any one of these may cause undulant fever in man. The cultural and serological characteristics of each variety have intrigued many scientific workers. Naturally, certain information obtained has been controversial. The nitrogen metabolism differences as observed by McAlpine and Slanetz, the experiments of Huddleson as to H₂S production and sensitiveness toward certain dyes, and the agglutinin-absorption tests of Meyer and Shaw have been advanced as of definite value. Of all, perhaps the latter may prove the most valuable for the recognition of the various types.

The epidemiologic evidence is far from being definite, complete or conclusive. There is no doubt that raw milk, whether it be from goats or cows, offers indisputable chances for infection, provided the herds supplying them are shedding the organisms in sufficient amounts and are of sufficient virulence. The low index of the disease in children and the present

statistical superiority of the disease in males, especially in rural sections, has been used as a basis for assuming that many cases may be due to contact with infected animals. There is much information yet to be supplied by careful epidemiologic field work.

For diagnosis, blood serum for the microscopic agglutination tests should be submitted to the laboratory with a description of the case and the possible source of the infection. These specimens should be taken at least one week after the onset of the fever. Negative specimens should be repeated. Positive agglutination tests of 1/80 dilution or lower are suggestive, and above 1/80 dilution in a case showing clinical symptoms would warrant a diagnosis. Blood cultures, when possible, should also be done, especially in order to obtain the infecting type of organism for study. Recently Amoss and Poston have reported positive isolation of *Brucella* organisms from stools of persons ill with the disease. Report your cases and suspicious cases, and confirm your clinical diagnosis by laboratory tests. Such control measures as pasteurization of all milk and the elimination of infected animals from herds delivering certified raw milk are advocated.

Immigration Control of Meningitis.—The regulations directed against meningitis at the ports of departure consist of the examination of all steerage passengers within three days prior to embarkation for the purpose of determining if any are carriers of the meningococcus. There is also a reduction in the number of steerage passengers allowed, to obviate crowding aboard vessels. A careful inspection is made of passengers at the time of embarkation for the purpose of determining if any are suffering with fever of undetermined nature or other diseases which might be indicative of meningitis. Such persons and those proved to be carriers are refused sailing.

The measures to be carried out on board the vessel during the voyage are of marked importance. They are briefly as follows:

(a) Steerage passengers embarked at each port shall be maintained respectively in noncommunicating groups.

(b) Separate mess gear shall be used for each group, and shall be sterilized in an approved manner after each use. The use of common drinking cups and common towels is prohibited.

(c) Medical inspection shall be made twice daily en route by the ship's doctor, who shall immediately isolate in the ship's hospital or other suitable quarters any persons suspected of having a communicable disease.

(d) All measures practicable shall be taken on board to reduce individual contacts to a minimum, and especial attention shall be given to avoiding chilling exposure and to providing ample ventilation.

Upon arrival the protective measures consist of careful inspection and the treatment indicated—in the case of meningitis, the isolation of the sick, the culturing of all contacts for carriers and the detention of contacts for fourteen days; reculturing of those detained prior to release.

Foods for State Institutions Analyzed.—Most of the food materials used in state hospitals and other state institutions are examined regularly by the Bureau of Food and Drugs of the State Department of Public Health in order to determine if they comply with the requirements of the California Food Law and also to determine if they are of the standard required in the specifications of the Division of Service and Supply of the State Department of Finance. Among such foods which are inspected may be mentioned baking powder, baking soda, butter, canned goods, cheese, coffee, chocolate, cocoa, condiments, flavoring extracts, flour, syrups, oil, pastes, spices, sausage, sugar, tea, vinegar, and many other foods. Feeding stuffs used for stock and poultry at the state farms which supply institutions are also examined in order to determine their nutritive value and if they meet the requirements of the California Feeding Stuff Act.

CALIFORNIA BOARD OF MEDICAL EXAMINERS

By C. B. PINKHAM, M. D.
Secretary of the Board

News Items, December

At the annual meeting of the Board of Medical Examiners held in Sacramento October 21, P. T. Phillips was reelected president for the thirteenth term; William R. Molony, vice-president; Charles B. Pinkham, secretary-treasurer, for the seventeenth term.

Refusal of private hospitals throughout the state to accept narcotic addicts for treatment, reported by James Collins, director of Professional and Vocational Standards, is creating a serious situation, state authorities admitted today . . . (San Diego *Tribune*, November 1, 1929). Questionnaires have been distributed by the Board of Medical Examiners to five hundred hospitals and sanitariums in California. Thus far only fifty-six have asked for approval to give private treatment to narcotic addicts, in accordance with the provisions of the State Narcotic Law and Medical Practice Act.

Y. Iheda was on November 1 found guilty of violation of Section 17 of the Medical Practice Act at Salinas and sentenced to pay a fine of \$100 in connection with the rapidly growing practice of certain Japanese in promoting the sun-ray machine, the defendant admitting that he had no knowledge whatsoever of any of the ailments he was treating, nor had he any hospital or medical training, although a beautifully engrossed Japanese diploma, certifying that he was a Sun-Ray College graduate, was hanging in his office, which he said was given to him at the time he purchased the machine he was using.

Gilbert A. Kelley, Bridgeport physician, won a dismissal of the charges recently filed before the Board of Medical Examiners when the case was heard at a regular meeting of the board held in Sacramento, October 24, 1929.

At a regular meeting of the Board of Medical Examiners held in Sacramento October 22, 1929, the license heretofore issued entitling Robert C. Kirkwood to practice as a physician and surgeon in the State of California was revoked.

Dr. Roy S. Lanterman, former Los Angeles County Coroner, today was freed from the charge of performing or aiding an illegal operation on Miss Delphine Walsh, motion picture actress and dancer, who later died from the operation. The State Board of Medical Examiners held that the testimony against Lanterman was inadequate. A similar charge of performing an abortion on Miss Nellie White of Los Angeles on December 10, 1928, was continued (Los Angeles *Herald*, October 23, 1929). (Previous entry, September 1929.)

Investigation discloses that the fake University of Illinois medical diploma found in possession of K. Higashi was made by a commercial engraver in Los Angeles, who stated that Higashi furnished the wording of the copy; also that Higashi affixed the signatures and that said engraver later made another similar diploma.

Dr. George E. Darrow, Azusa physician, is held in the county jail, faced with imprisonment for life in state prison in consequence of a verdict of a jury in Superior Judge Emmett H. Wilson's court, which adjudged him guilty of second degree murder in connection with the death of Miss Jennie Peterson, twenty-three, who died from an illegal operation performed by Doctor Darrow . . . (Covina *Citizen*, October 31, 1929).

The Los Angeles *Examiner* of November 1, 1929, relates a raid on the office of "Dr." D. R. Gonzales, 29-year-old Filipino, when fraudulent diplomas from Columbia University, College of Physicians and Surgeons, and Cambridge University, London, and a fraudulent license to practice in the State of California were seized. Gonzales is charged with violation of the Medical Practice Act, it being reported that he was carrying on quite an extensive practice among the Filipinos.

According to the Sacramento *Bee* of October 22, 1929, R. J. Howard, charged with violation of the Medical Practice Act, failed to appear in the Justice Court at Redding when his case was called for trial and Judge R. P. Stimmel declared Howard's cash bail of \$200 forfeited, issued a bench warrant for the arrest of Howard and raised his bail to \$1000.

Issuance of a warrant for Dr. John C. Newton, 291 Geary Street, inaugurated a campaign yesterday against careless writing of narcotic prescriptions by physicians. Inspector Francis O'Farrell swore out the warrant. He stated persons for whom Doctor Newton had written prescriptions denied receiving them . . . (San Francisco *Examiner*, October 19, 1929).

At a regular meeting of the Board of Medical Examiners held at the State Capitol, Sacramento, October 24, 1929, the license heretofore issued to Thomas O. Greig, entitling him to practice as a physician and surgeon in the State of California was revoked. (Previous entry, "News Items," October 1929.)

At a regular meeting of the Board of Medical Examiners held in Sacramento October 23, 1929, the license of Ralph Newcomb, Upper Lake, California, to practice as a physician and surgeon in the State of California was restored, without alcohol privilege.

The Mexican Senate today approved the Bill of Professions, which requires all foreign professionals doing business in Mexico to become naturalized Mexican citizens (press dispatch dated Mexico City, October 15, published in the Sacramento *Bee*, October 15, 1929).

After deliberating until 11:25 last night, the jury hearing the long-delayed case of Frederick G. Collett was locked up for the night. Collett is one of the defendants in the notorious \$300,000 Rellimeo mail fraud indictment. The case was heard yesterday in the court of Federal Judge Harold Louderback. Collett was indicted in March 1928, along with Orlando E. Miller, now a fugitive from justice, and two other officers of the company. They are accused of fleecing a number of Bay District residents, largely women, out of \$300,000 in the sale of the defunct film company stock . . . (San Francisco *Examiner*, December 25, 1929). (Previous entries June, October, November, 1926; March, 1927; March, 1928.)

Dr. James Hayes Taylor, fifty-four, wanted in Waynesboro, Tennessee, for impersonating a federal officer, is scheduled to start back tomorrow in custody of a United States marshal. Taylor was arrested here recently in company with Mrs. Ruth Lee Garrison, twenty-five, with whom he motored to California (San Francisco *Call*, November 1, 1929).

R. A. Cain, asserted licensed chiropractor, reported arrested in Sacramento, October 19, on a charge of issuing spurious checks.

Some idea of the number of licensed chiropractors in California may be drawn from the announcement in the Sacramento *Union* of November 1, 1929, that the State Chiropractic Board had mailed 2800 renewal application blanks to chiropractors licensed to practice in California.

BOOK REVIEWS

The Newborn Infant. A Manual of Obstetrical Pediatrics. By Emerson L. Stone. Pp. 183. Philadelphia: Lea and Febiger, 1929.

This book gives an excellent résumé of the abnormalities and diseases of the newborn. The practical points given for the care of emergencies arising at the time of delivery and during the first few days of life are of value, not only to the obstetrician and pediatrician, but to the general practitioner, to the house officers and interns as well.

H. E. T.

Serious Symptoms in Chronic Heart Disease. By Harrington Bennett Munroe. Pp. 80. Los Angeles: Frederick G. Andrews Press, 1928. Price, \$2.

Too often is the reviewer tempted to turn captious critic, so this one wishes to deny the impeachment at the outset.

He finds this book without outstanding merit; it contains nothing untrue or unscientific, but the objection is that its matter is or should be well known to students of heart disease, and therefore the contents are platitudinous. No particular reason exists for the publication, and I fear it will shortly be relegated to the limbo of unnecessary volumes.

H. W.

Injection Treatment of Internal Hemorrhoids. By Marion C. Pruitt. Pp. 137. Illustrated. St. Louis: C. V. Mosby Company, 1929.

The author uses a 12½ per cent carbolic acid solution, reverting to the drug originally used for the injection of internal piles. His results have been so good that he has had no reason to try any other drug, such as quinin and urea hydrochlorid, which has been the favorite of American proctologists for the last decade. Interesting to note is that Pruitt injects third degree piles, i. e., those that protrude. The reviewer has tried this on two patients, but never again! The patients are laid up from five to eight days and suffer severe pain. The ligature operation, with a local anesthetic, is far preferable. However, the public are peculiar, and will often undergo what to us seems intolerable inconvenience rather than enter a hospital and subject themselves to the "knife."

A. N.

The Writing of Medical Papers. By Maud H. Mellish-Wilson. Third edition. Pp. 184. Philadelphia and London: W. B. Saunders Company, 1929. Price, \$1.50.

Mrs. Mellish's book is without doubt a valuable storehouse of detailed information on the technique of preparing medical papers. While the reviewer is quite aware of the poor literary quality of much of our modern medical writing, it is rather a shock to discover that the author feels it necessary to include chapters on elementary grammar and on the rudiments of good diction. When one considers, however, how Holmes, Flint, or Weir Mitchell would have shuddered on reading that we "opened the ABdomen and found a lot of pathology in the right upper quadrant" and that "we operated her" (her being a person and not a ship or an automobile) Mrs. Mellish's compendium, frank as the implication is, seems, perhaps, in order. It might be wise for the present generation of medical writers and speakers to note, also, that the word "shots" refers more properly to the jargon of the underworld dope addict than to the hypodermic syringe of the physician.

A. L. B.

Youthful Old Age, How to Keep Young. By Walter M. Gallichan. Pp. 236. New York: The Macmillan Company, 1929. Price, \$2.50.

The reviewer was very glad to read this book for various reasons.

The splendidly written introduction by Thurman B. Rice, which covers very well the scope of the book, is also proof that at least a part of the profession begins to realize that enjoyment of life and all it offers is compatible with longevity and a tolerably agreeable old age. This principle the reviewer has been preaching since 1888.

The book itself offers in a pleasant and entertaining manner most valuable instructions to prevent premature senility, and as Einstein expresses his longing: to shape existence to escape from everyday life with its painful coarseness and desolating barrenness.

The instructions as to the mode of living are given with proper discriminations for individual differences.

The book will be read with profit by physicians and educated laymen alike, and one must disagree with the author only when he recommends woolen socks, as it is generally believed that no woolen clothing should be worn close to the skin.

V. G. V.

(Continued on Next Page)



Union Square Building

Exclusively

PHYSICIANS / SURGEONS / DENTISTS

350 Post Street, Facing Union Square
Garfield 0150

As a General Antiseptic

in place of

TINCTURE OF IODINE

Try

Mercurochrome - 220 Soluble

(Dibrom-oxymercuri-fluorescein.)

2% Solution

It stains, it penetrates, and it
furnishes a deposit of the germ-
icidal agent in the desired field.

It does not burn, irritate or injure
tissue in any way.

Hynson, Westcott & Dunning

Baltimore, Maryland

New York Post-Graduate Medical School and Hospital

Offers a Course in Internal Medicine

Including Diagnosis, Cardiology, Pulmonary Diseases, Gastro-Enterology, Endocrines, Metabolism, Arthritis, etc.

Courses are of one, two and three months' duration and are continuous throughout the year

For descriptive booklet and further information address

THE DEAN

313 East Twentieth Street

New York City

BOOK REVIEWS

(Continued from Previous Page)

Acute Infectious Diseases. By Jay Frank Schamberg and John A. Kolmer. Second edition. Pp. 888. Illustrated. Philadelphia: Lea and Febiger, 1928.

This excellent work reflects the authority of its authors. In reading it through critically, however, one is led to wish that typographical errors could be eliminated in a second edition, as also much verbose and loose writing. Misprints are far too common. The content of the volume could be condensed to its advantage and with no loss of actual material. The name is distinctly a misnomer, as it covers only a selected list of infectious diseases. One could wish that editorial rewriting and condensation had been rigorously exercised and then that the list of subjects had been extended to cover infectious diseases in general. The allocation of space is not well proportioned, as for instance, when a book under this title allows 32 per cent of its 888 pages to be devoted to smallpox.

In spite of diffuse style, omission of many of the infectious diseases and numerous minor errors, the book is decidedly worth the attention of the physician in general practice and is a necessity for the teacher, research worker, public health specialist, and diagnostician. An enormous amount of interesting and scientifically valuable material is included, and the excellent index makes this matter easily accessible.

A. C. R.

Textbook of Clinical Neurology for Students and Practitioners. By M. Neustaedter, with an introduction by Edward D. Fisher. Pp. 602. Illustrated. Philadelphia: F. A. Davis Company, 1929. Price, \$6.

This volume, according to the author, is written not primarily for the neurologist, but for the medical student

and general practitioner. Part one, consisting of three chapters, treats of examination methods both clinical and laboratory; part two is devoted to spastic paralyses; part three to flaccid paralyses; part four to ataxias, tremors, and spasm; part five to trophic disorders; part six to vasomotor disorders; and part seven to functional neuroses.

The book is abundantly illustrated, most of the illustrations, especially the clinical ones, being original and excellent. There are minor points for criticism, such as the statement on page 82, regarding the technique of cisternal puncture in which the limit of depth allowable for the needle is given as 3 cubic centimeters, which would result in much disappointment if followed, as fluid is rarely reached with the adult at less than 4.5 cubic centimeters. Part seven on functional neuroses might as well have been omitted. Twenty-two pages on the functional neuroses will only bewilder the beginner and bring little additional to the more learned. The neurological part of the volume is much to be commended.

E. W. T.

Pioneer Medicine in Western Pennsylvania. By Theodore Diller, with a foreword by J. J. Buchanan. Pp. 230. Illustrated. New York: Paul B. Hoeber, 1927. Price \$3.

The history of medicine in western Pennsylvania may be said to have begun in 1775, when General Braddock, with a large force, marched against the French at Fort Duquesne and was decisively defeated. Mortally wounded, the English general was carried to the rear and his wounds were dressed by Dr. James Craik.

All of the first physicians in Pittsburgh were military men as well as physicians and surgeons and possessed military titles as well as a medical one. At least three were doctors of divinity as well as of medicine and ministered to the body as well as the soul. A few were allied to the law, but the great majority, from the beginning to the end of their careers, were physicians.

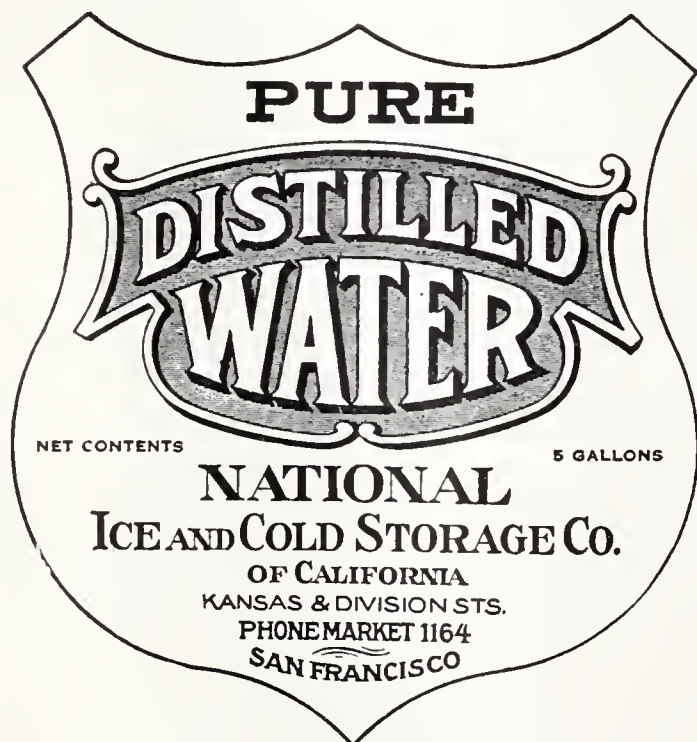
The book is a fascinating study, especially of the medical men of a century ago and under frontier conditions. It includes a record of physicians for over a century and a half. It begins with Dr. James Craik, Washington's private physician, and it ends with those of today. The book has only one fault—the survey is too brief. But it should stimulate other medical historians to perpetuate the lives of their predecessors.

G. D. L.

The Conquest of Cancer by Radium and Other Methods. By Daniel Thomas Quigley. Pp. 539. Illustrated. Philadelphia: F. A. Davis Company, 1929. Price, \$6.

This book, beginning with its Hollywood-Hearst title and ending with its childish table on the author's conception of a new and old orientation of cancer, is everything that a decent medical monograph should not be. It seems a pity (and it is a reflection on a profession which apparently buys such things) that a book like this can find a publisher. It is full of the wildest and most unfounded statements; almost every page contains some gem and no review would be complete without quotation of two or three. The author's conception of the etiology of cancer of the breast: "Germs . . . may be introduced from infected teeth, tonsils, or other infected body areas by way of the blood stream. A low grade

(Continued on Page 14)



For Medicinal, Industrial and Drinking Purposes

STATE BOARD REVIEW

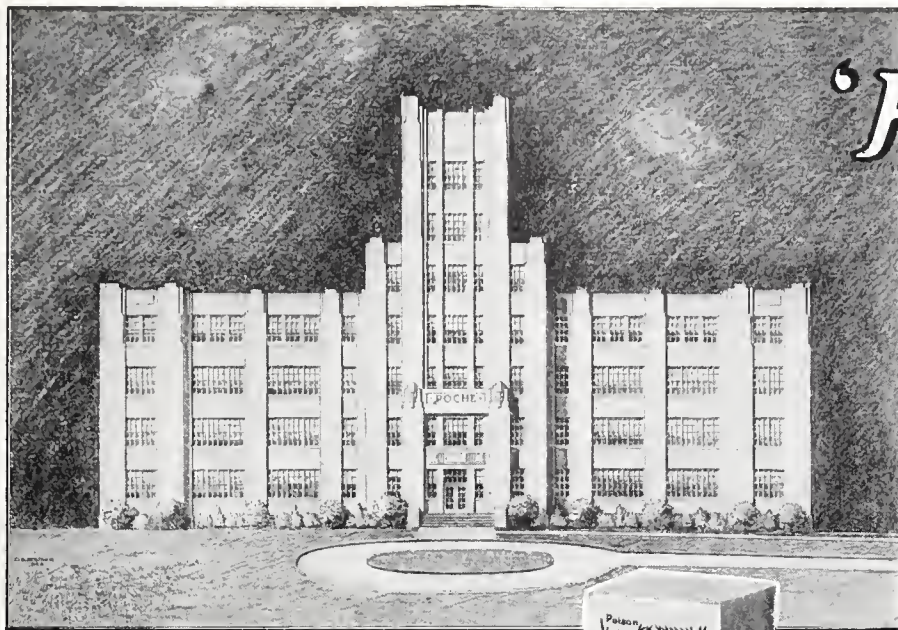
Preparation for State Board
Examination

WRITTEN OR ORAL

DR. MORRIS STARK

4405 So. Broadway

LOS ANGELES, CALIFORNIA



'Roche'



The
central
administration
building of the
extensive new
'Roche'
Laboratories
at
Nutley,
New Jersey

Where

DIGALEN	'Roche'
THIOCOL SYRUP	'Roche'
ISACEN	'Roche'
PANTOPON	'Roche'
IODOSTARINE	'Roche'
LAROSAN	'Roche'

and other fine remedies
are now made



We invite
physicians
to send for
trial supplies
of any of these
well known and
widely used
remedies

Hoffmann-La Roche, Inc.

Makers of Medicines of Rare Quality
NUTLEY NEW JERSEY

SUTTER HOSPITAL

Twenty-eighth and L
SACRAMENTO, CALIFORNIA
Telephone Main 7676

Thoroughly efficient surgical, medical, obstetrical and pediatric divisions, supported by exceptional clinical and X-ray laboratories, with Physical-Therapy and Dietetic facilities. Graduate staff throughout. Accredited by A. C. S.

A friendly welcome to out-of-town patrons



Graduate School of Medicine

The Tulane University of Louisiana

Approved by the Council on Medical Education of the A. M. A.

Post graduate instruction offered in all branches of medicine. Courses leading to a higher degree have also been instituted.

For bulletin furnishing detailed information apply to the


DEAN

Graduate School of Medicine

1551 Canal Street

New Orleans, La.

No Starch



CASE IN - PALM NUT

Dietetic Flour

Starch-free Diabetic Foods that are appetizing are easily made in the patient's home from Listers Flour. It is self-rising. Ask for nearest depot or order direct.

LISTER BROS. Inc., 41 East 42nd St., NEW YORK

BOOK REVIEWS

(Continued from Page 12)

infection with local acid reaction results, which eventually may stimulate cells in the neighborhood to grow and a tumor or cancer is started." A note for those interested in the next constitutional amendment: "We have checked the effect of tobacco in hundreds of cases of lip cancer and have found that the disease will always appear again after cure if the patient goes back to the use of tobacco." And encouragement to the beauty parlors to enter a new field: "Many old people present a more youthful appearance after radium treatment about the face or neck. This may be due to a more or less sterilizing effect of the radium radiation on neck glands which have become loaded with toxic material from diseased mouths." "Cancer the result of faulty hygiene." "The human animal, with a lower opsonic index, and a lower fighting ability in the white blood corpuscles" (the author is comparing us to wild animals) "drags himself along through a relatively short life, carrying chronic infections in various parts of his body." Hence cancer and its "conquests" by radium.

The book contains no statistics worthy of the name and no technical details as to the author's method for "conquering" cancer. J. M. R.

The Neuroses. By Israel S. Wechsler. Pp. 330. Philadelphia and London: W. B. Saunders Company, 1929. Price, \$4.

After an introductory chapter which deals with the history of psychiatry from the earliest periods, and a rather detailed study of later developments, especially from the Charcot period on through Freud, Jung, Adler, Bleuler, and others, one comes to chapter two, on mental mechanisms. This and chapter three on the etiology of the neuroses is an exposition of the author's conception, in which he shows himself to be a loyal Freudian, with little sympathy for the heretics, especially for the arch-heretic Adler. The classification of the neuroses in chapter four follows Freud very closely, although the author weakens a little when it comes to subscribing to the Freudian dictum, that neurasthenia is invariably a result of masturbation. The long chapters on clinical manifestations and diagnosis, course and prognosis, are interspersed with some thirty illustrative histories.

The chapter on treatment, twenty-six pages, shows little patience with any methods which are not Freudian,

but there is no undue optimism. It is recognized that only certain cases lend themselves to psycho-analysis and that the method is not a panacea for the neuroses. The usual condition is laid down for the psycho-analyst: that he must first be analyzed himself as the only adequate means of learning the method. The secrets must be transmitted directly from adept to initiate, as from one augur to another. In an appendix there are directions given for history taking and examination, with a few paragraphs on intelligence tests by David Wechsler, Ph.D. Bibliographical references are given in one place at the end of the volume.

The book reads easily and is temperate in tone throughout. Quite a satisfactory but not at all a striking book. E. W. T.

The New Pocket Medical Formulary. By William E. Fitch. Fifth edition. Pp. 501. Philadelphia: F. A. Davis Company, 1928. Price, \$3.

The fact that five editions of a book have been printed is presumptive evidence that it is filling a need and that the information therein is acceptable.

To the long list of prescriptions, charts on diagnosis, tables of dosage of drugs, tables of weights and measures and allied information, has been added a chapter containing equivalent words and short phrases in English, French, German, and Italian. In addition the material on dietotherapy has been increased. The attempt to cover so large a field in so short a book necessarily leads to difficulty. For example, under the heading "Asthma"—while twelve formulae are given, the hypodermic use of epinephrin is not included. It may be that the author purposely left it out. Incidentally, the word "adrenalin" is used instead of epinephrin.

The use of diphtheria antitoxin is advised, but the dose is entirely inadequate. Scarlet fever antitoxin is not even mentioned. It would seem better to give more consideration to the giving of insulin, and less to some of the formulae given. More emphasis could also be placed on the use of antimeningitis serum in meningococcus infection.

As had been stated some of these defects are inherent in this type of book. The fact that this is the fifth edition proves that it has its place as a small book of reference to be carried with one. Not the addition of more material is needed, but a more thorough revision of the material used. G. E. H.

BOOK REVIEWS

The History of Hemostasis. By Samuel Clark Harvey. Pp. 128. Illustrated. New York: Paul B. Hoeber. 1929. Price, \$1.50.

Originally published in the "Annals of Medical History," this small volume gives for the first time a complete and accurate story of the evolution in the control of hemorrhage, fascinating to the student, teacher, and surgeon. F. L. R.

A Manual of Diseases of the Nose, Throat, and Ear. By E. B. Gleason. Sixth edition. Pp. 617. Illustrated. Philadelphia and London: W. B. Saunders Company. 1929. Price, \$4.50.

The 1929 edition contains six hundred and seventeen pages as compared with six hundred and sixty pages of the 1924 edition. This reduction has been obtained largely by placing the lines closer together and leaving smaller page margins. The books are about the same in size. Here and there small passages on old ideas and methods have been omitted or changed; or new items have been made, but for the most part the book reads word for word. J. A. B.

What You Should Know About Heart Disease. By Harold E. B. Pardee. Pp. 120. Illustrated. Philadelphia: Lea and Febiger. 1928.

Here is an attempt, and a fairly successful one, to impart to the public, and in particular to the sufferers from a heart disturbance, certain knowledge which cannot help but serve a useful purpose.

Many times a patient fears that his doctor is misleading him by not being frank enough. The patient can acquire knowledge about himself from this book in an unbiased manner and in a way which will not frighten.

Pardee starts right out straight from the shoulder and says, "If you have been told that you have a murmur," etc., this at once gets the attention of the vast majority of cardiac patients. H. S.

Surgical Pathology. By William Boyd. Second edition. Pp. 993. Illustrated. Philadelphia and London: W. B. Saunders Company. 1929.

A more complete work than the first edition, brought up to date as completely as is ordinarily possible in a text.

The introductory and general chapters on inflammation and repair, surgical bacteriology, shock, hemorrhage, embolism, etc., present evidence of much clear thought and sound reasoning condensed and presented in very readable English—excellent reading for the student during his course in general surgery.

If there be any criticism offered, some of the space devoted to theoretical and clinical considerations might better have been used to elaborate in more detail the description of gross pathology at the operating table—notably in the chapters on tumors. A. R. K.

Serum Diagnosis by Complement Fixation, with Special Reference to Syphilis—The Principles, Technique and Clinical Applications. By John A. Kolmer. Pp. 583. Illustrated. Philadelphia: Lea and Febiger. 1928.

This book covers the investigations by Kolmer and hence is a more or less personal work, which covers the subject thoroughly and in an efficient manner. Most of the subject-matter deals with the complement fixation as applied to the diagnosis of the different forms of syphilis. However, he devotes considerable space to this reaction in other diseases of protozoic and bacterial origin which has heretofore received little attention. While he covers the ground in these diseases, one could wish that he had devoted more space to detail.

On the whole it is an excellent book.

H. R. O.

Proctology—A Treatise on the Malformations, Injuries and Diseases of the Rectum, Anus, and Pelvic Colon. By Frank C. Yeomans. Pp. 661. Illustrated. New York: D. Appleton and Company. 1929.

Doctor Yeomans has produced a masterly work on rectal diseases, sustaining the high standard set by the book of his preceptor and predecessor, Tuttle; and, by adding whatever is new, has brought the subject down to the present moment. Already well known as the inventor of one of the best sigmoidoscopes in use today, this book assures him a position among the leaders of his specialty.

While we may not agree with everything he says, still what he says is true, having behind it the weight of experience, practice and authority. For example, he prefers the clamp and cautery in the operative treatment of internal piles. He finds it best. Others prefer the ligature for the same reason. For the injection treatment he uses carbolic acid; we lean toward quinin and urea hydrochlorid. Many roads lead to Rome!

In the treatment of pruritus ani, the author has introduced benacol, benzoic salt of benzocain (anesthetin). Dissolved in oil, it is given hypodermically under the anal skin. Yeomans reports brilliant results from this

(Continued on Next Page)



Union Square Building

Exclusively

PHYSICIANS / SURGEONS / DENTISTS

350 Post Street, Facing Union Square

GAfield 0150

As a General Antiseptic

in place of

TINCTURE OF IODINE

Try

Mercurochrome - 220 Soluble

(Dibrom-oxymercuri-fluorescein.)

2% Solution

It stains, it penetrates, and it furnishes a deposit of the germicidal agent in the desired field.

It does not burn, irritate or injure tissue in any way.

Hynson, Westcott & Dunning

Baltimore, Maryland

New York Post-Graduate Medical School and Hospital

Announces a new course of six months' duration in

UROLOGY

Beginning January 2nd, 1930

For descriptive booklet and further information address

THE DEAN

313 East Twentieth Street

New York City

BOOK REVIEWS

(Continued from Previous Page)

treatment. Being painless, it is readily given in the office.

Treatment of rectal stricture with carbon dioxid snow has not given him the favorable results claimed for it by others (Clemons).

The chapter on prolapse is thorough. In megacolon the brilliant results of lumbar sympathetic ganglionectomy and ramisectomy are duly recorded.

In chronic ulcerative colitis the results of the latest vaccine treatment are evaluated. The chapter on rectal incontinence is disappointing, none of the plastic operations for replacing the sphincter being mentioned.

The section on cancer gives the author's methods and results in the treatment of this disease; also the methods and results reported by others. He comes to the conclusion that early operation holds out the best hope for cure, the results from x-ray and radium thus far being only disappointing. A. N.

Devils, Drugs, and Doctors—The Story of the Science of Healing, From Medicine-Man to Doctor. By Howard W. Haggard. Pp. 405. Illustrated. New York and London: Harper and Brothers, 1929.

This charming volume, with its numerous and well-chosen illustrations from original sources, is a book to be recommended to the practitioner, the student, and the layman. It would be not amiss to suggest that it replace a few of the monthly magazines in the physician's waiting room. I know of no other book that can so clearly give an appreciation of the sound scientific medicine now practiced as well as an illuminating insight into quackery, whether ancient or of the present day.

The text holds the attention throughout although to the physician perhaps the first chapter or two may seem a

familiar story. On reading further one is impressed by the author's care in presenting authentic material and anecdote in a most charming manner.

Simply leafing through the volume, glancing at the illustrations taken from medical works since the dawn of printing, and reading a paragraph here and there, will arouse an interest to absorb the book as one does a fascinating detective story. F. L. R.

Urology. By Edward L. Keyes. Pp. 763. Illustrated. New York: D. Appleton and Company, 1928.

This book might well have been entitled "A Philosophy of Urology." It is written in a conversational style that makes it more entertaining than a novel, and the purity of diction, vividness of imagery, accuracy of description and orderly development of the themes would warrant its use as a collateral text in a college rhetoric class. It is a lineal descendant of Van Buren and Keyes' textbook originally published fifty-five years ago, and the outstanding genito-urinary text for two generations. Doctor Keyes frankly states that he is impatient with the repetition of second-hand knowledge, and therefore this book, with a very few exceptions, is based wholly on his father's work and his own large personal experience.

The volume is comparable in many ways to "Osler's Practice of Medicine," which has often been described as the best one-volume surgery ever published. Each disease, as in "Osler's Practice," is considered didactically from the standpoint of etiology, pathology, symptoms, differential diagnosis, prognosis, and treatment. The symptoms of the diseases and the clinical pictures are considered in detail. Appropriate illustrative cases are frequently interpolated and there is a terse but thorough discussion of the urological pharmacopeia. With only a limited knowledge of general medicine, one could practice urology from this book.

Although all the late advances in the field of urology are comprehensively treated, the volume is smaller than its predecessors. This is due to the deletion of details that are now matters of common knowledge and belong in textbooks of anatomy, embryology, bacteriology, pathology, etc. Furthermore, the use of simple aphorisms has saved pages of descriptions.

There has been no attempt made to provide a complete bibliography, but all pertinent late literature is included and there are references to the outstanding articles that are provided with extensive bibliographies.

The illustrations consist of artists' sketches, photographs, diagrams, line drawings and composites in place of the regulation retouched radiograms. The volume contains very few reversed pictures or typographical errors.

Controversial subjects are discussed frankly, and when he does not approve of a treatment mentioned he quotes the authority and then gives his choice with reasons. His ideas are positive and unequivocal, as "The objection to Otis' theory is that it is incorrect"; "Never inject a kidney with a syringe to make a pyelogram"; "I have had no luck with diathermy"; "Mercurochrome intravenously has apparently shot its bolt, the uncertainty of its action, the lack of any scientific foundation for its use, the deaths that it has caused by acute mercurial poisoning, have condemned it. As a local urinary antiseptic, however, it has great value."

(Continued on Page 14)



For Medicinal, Industrial and Drinking Purposes

STATE BOARD REVIEW

Preparation for State Board
Examination

WRITTEN OR ORAL

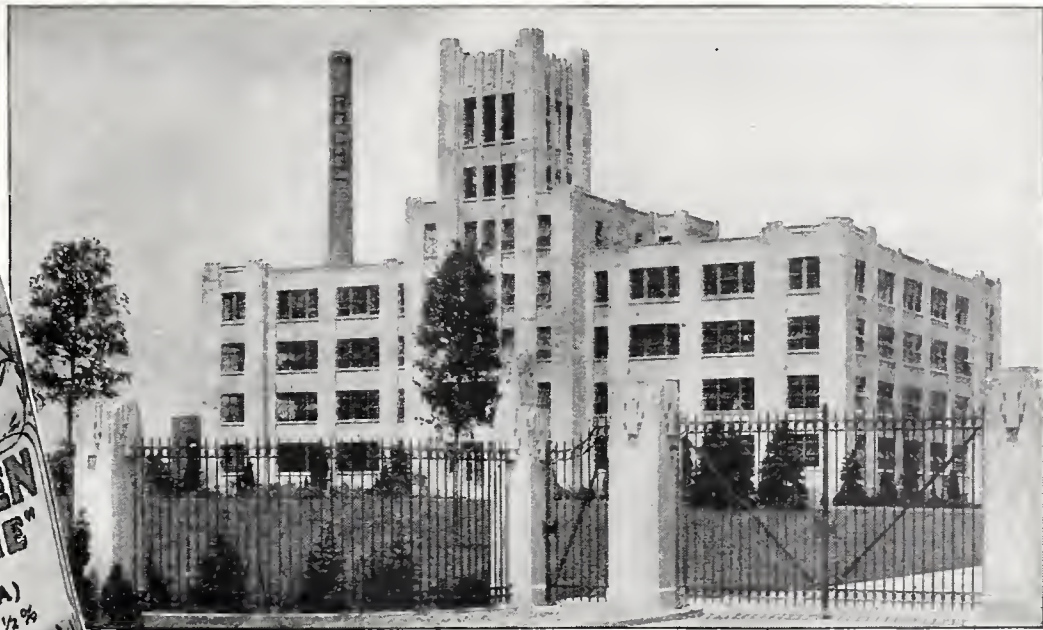
DR. MORRIS STARK

4405 So. Broadway

LOS ANGELES, CALIFORNIA

Where Digalen is now made ■ ■ ■ ■

The central administration building of
the new 'Roche' Laboratories at Nutley, New Jersey



COUNCIL ACCEPTED

for the heart **DIGALEN**

The first injectable digitalis ever made
available—Always the first choice of
many distinguished cardiologists

IT was 'Roche' chemists, with their exacting skill and unlimited facilities, who made possible the first use of digitalis by injection. Digalen has long been in extensive use. Its use is world-wide. Whenever the heart is still responsive to digitalis Digalen may be counted on to give prompt support. That is the point that makes and holds users of Digalen.

A trial vial for your bag on request

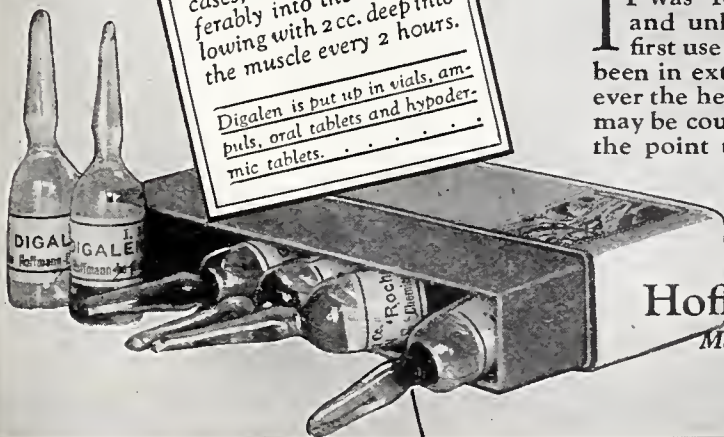
Hoffmann-La Roche, Inc.

Makers of Medicines of Rare Quality
NUTLEY, NEW JERSEY

DOSAGE
Orally: 8 to 32 minims
3 times daily until compen-
sation is re-established.
Reduce dosage gradually.

By injection: in critical
cases, inject 2 to 4 cc. pre-
ferably into the vein, fol-
lowing with 2 cc. deep into
the muscle every 2 hours.

Digalen is put up in vials, am-
puls, oral tablets and hypoder-
mic tablets.



SUTTER HOSPITAL

Twenty-eighth and L
SACRAMENTO, CALIFORNIA
Telephone Main 7676

Thoroughly efficient surgical, medical, obstetrical and pediatric divisions, supported by exceptional clinical and X-ray laboratories, with physical therapy and dietetic facilities. Graduate staff throughout. Accredited by A. C. S.

A friendly welcome to out-of-town patrons



Graduate School of Medicine

The Tulane University of Louisiana

Approved by the Council on Medical Education of the A. M. A.

Post-graduate instruction offered in all branches of medicine. Courses leading to a higher degree have also been instituted.

For bulletin furnishing detailed information apply to the

DEAN

Graduate School of Medicine

1551 Canal Street

New Orleans, La.

No Starch

Listers
CASEIN-PALMNUIT

Dietetic Flour

Starch-free Diabetic Foods that are appetizing are easily made in the patient's home from Listers Flour. It is self-rising. Ask for nearest depot or order direct.

LISTER BROS. Inc., 41 East 42nd St., NEW YORK

BOOK REVIEWS

(Continued from Page 12)

There is a kindly note that runs throughout his criticisms, and in considering one of the series recently published of "One Hundred Consecutive Prostatectomies Without a Death," followed by a series of not published fatalities, he pleads for tolerance, stating that "even the statistician should be permitted to be human in spots."

Doctor Keyes emphasizes throughout the book that the most important elements are the surgeon's experience, discretion, gentleness, and assiduity. He repeatedly emphasizes the need of an educated sense of touch, and characteristically states that "to look upon the chills and fevers that so often follow the first dilation of the ureter as cheering evidence that an infection has been located which we may now set about to cure may be well enough, but it is also evidence that the ureter has been assailed with the touch of a gynecologist rather than that of a urologist."

Because of the author's years of active interest in social hygiene work he is eminently fitted to sanely and scientifically discuss the subject of sex, and that section is so simply and clearly written that any mother after reading it will have no trouble in knowing what and how to pass on the required information to her children.

Keyes' "Urology" is an ideal textbook for a medical student, a mine of practical information for the general practitioner, a vade mecum for the specialists, and many chapters could be read with profit and pleasure by the layman.

M. B. W.

Care of the Mouth and Teeth. By Harvey J. Burkhart. The national health series, edited by the National Health Council, Pp. 45. Illustrated. New York and London: Funk and Wagnalls Company. 1928.

The statement of Sir William Osler that oral hygiene "will do more to prevent disease and promote the health of the human race than any other single activity in the whole field of modern sanitation," quoted by the author, best expresses the real purpose of this book, primarily prepared for American families, yet of general interest.

The author's recommendations on the value of the mouth hygiene movement, both in home care for persons of all ages and the professional care by the dental hygienist plus the educational work she is doing now with the children, are widely accepted by the laity and the dental profession.

The sections dealing with infections of the mouth during infancy, and at later periods, the problems of ram-

pant decay in childhood and dento-facial deformities should interest the physician.

Trench mouth is discussed rather lightly; for while some cases "yield quickly to treatment" others do not respond so readily and require long periods of treatment.

The age of twelve to fourteen years is mentioned as probably the best period for orthodontic treatment though early periods are mentioned. The orthodontic profession, awakening to the need of and the opportunity for preventing dento-facial deformities are rapidly turning their attention to the preventive phases of their practice with economic advantage to the public. Many cases are now treated between the ages of three and six.

The subject-matter on diet conforms to the generally accepted beliefs of the day.

Except for the cover, the make-up of the book, including the diagrams of the teeth, is not as good as a health education series by this group of selected authors justifies.

G. S. M.

Bacteriology for Nurses. By Charles F. Carter. Pp. 213. Illustrated. St. Louis: C. V. Mosby Company. 1928. Price, \$2.25.

The object of presenting this volume, as stated in the preface, is to "prepare a treatise, the subject-matter of which would be presented in accordance with the outline prepared by the Committee on Education of the National League for Nursing Education as a part of their model curriculum."

The book is well printed on good paper and contains a number of well-chosen illustrations. The subject-matter is presented in elementary form, but is probably adequate for the nurse in training. It is not a book of reference. An excellent feature is the list of questions which is placed at the end of each chapter.

E. C. D.

A Handbook for the Diabetic. By Albert H. Rowe. Pp. 129. Illustrated. New York: Oxford University Press. 1928.

In this small book the author expresses, in simple and concise language, his views on diabetes. The book is written primarily for the patient as an aid in the acquisition of sufficient knowledge regarding the disease to help those afflicted with it to a better understanding of the problems which continually recur. The first few pages are devoted to a general discussion of diabetes and the outlook of the diabetic. A short chapter tells the story of insulin and its use. Subsequent chapters cover the methods of determining diets and various laboratory tests

(Continued on Page 16)

DOUBLE SECURITY!

Professional Protection

closes the door against loss
in your practice.

Specialized Service

locks the door against loss
in your protection.

The Medical Protective Contract is supported by a Specialized Service which distinguishes it from all others.

The Medical Protective Company

of Fort Wayne, Ind.

360 North Michigan Boulevard : Chicago, Illinois

MEDICAL PROTECTIVE CO.
360 North Michigan Blvd.
Chicago, Ill.

Kindly send details on your plan of
Complete Professional Protection

Name _____

Address _____

City _____

10-29

LOUIS CLIVE JACOBS, M. D., Urologist

Announces the Removal of His Offices to the Fourteenth Floor

FOUR FIFTY SUTTER, SAN FRANCISCO

OCTOBER 1, 1929

A LIMITED NUMBER OF LARGE, SPACIOUS OFFICES
NOW AVAILABLE

THE BUTLER BUILDING

SOUTHWEST CORNER GEARY AND STOCKTON STS.

A modern class A medical building.
In the center of San Francisco's shopping district
facing Union Square.

For information apply
SUPERINTENDENT OF BUILDING
Douglas 5387

CABLE WARP

TOWELS

Westinghouse

MAZDA LAMPS

O'KEEFE & COMPANY

Incorporated

WHOLESALE DEALERS

BEDDING / BED LINENS / CURTAINS

Carpets / Towels / Table Linens / Furniture

788 Mission Street

San Francisco

Telephones

Sutter 7599

Sutter 3458

BOOK REVIEWS

(Continued from Page 14)

which the diabetic should know. Finally there are a fairly large number of recipes and standard menus for the diabetic. The last few pages contain tables of food values, including the vitamin and mineral content of foods as well as the proportions of carbohydrate, protein, and fat. In fact the book is, as its title indicates, a handbook. The material is presented in a brief and simple manner. It can be read to advantage by every diabetic.

H. C. S.

Physical Examination and Diagnostic Anatomy. By Charles B. Slade. Fourth edition. Pp. 196. Illustrated. Philadelphia and London: W. B. Saunders Company. 1929.

This book, as the author states, "is intended to be a textbook on physical examination, its technique, fundamental methods, and principles." Diagnosis is carefully avoided, thereby simplifying the presentation, aiding the brevity and, all in all, making the text adhere strictly to a single purpose. It is in no sense a reference work, but is a clear, practical, concise, sensibly illustrated textbook for the use of the student when first being initiated into the mysteries of a physical examination, and may well be recommended as such.

Quite properly the major portion of the text deals with the examination of the chest. The primary change in the present edition consists in the addition of an appendix, covering the physical findings in the diagnosis of pulmonary tuberculosis. The reviewer feels that this addition is unnecessary.

A. L. B.

Diseases of the Ear, Nose, and Throat—Medical and Surgical. By Wendell Christopher Phillips. Seventh edition. Illustrated. Pp. 922. Philadelphia: F. A. Davis Company. 1928.

The seventh edition of "Diseases of the Ear, Nose, and Throat," by Phillips, is the original classic brought up to date.

The author has discarded much which has become obsolete and has substituted and added the recognized newer methods, instruments, and theories. The chapter

on hearing tests has been completely revised. In this chapter the audiometer is carefully described, both as to its uses and mechanics. Present-day problems of the medico-social conditions, resulting from hearing impairment, are discussed.

Considerable space has been given to sinus disease in children, mastoid antrum disease in infants where gastrointestinal symptoms predominate, and the value of light therapy.

The chapter on methods and instruments used in bronchoscopy and esophagoscopy has been entirely rewritten and modernized. The volume is so well written and the material so well organized that it is a most valuable reference for the specialist, student, and physician in general practice.

R. E. A.

Public Health and Hygiene, in Contributions by Eminent Authorities. Edited by William Hallock Park. Second edition. Pp. 902. Illustrated. Philadelphia: Lea and Febiger. 1928.

This second edition maintains the high standard of excellence which was established by the first. The text has been completely revised or rewritten, seven of the subjects being discussed by new contributors. Chapters on the control of cancer and on the aseptic technique in the control of communicable diseases have been added.

The subject-matter has been presented with sufficient detail to be authoritative but with a simplicity of style which makes easy reading. The illustrations are well chosen.

It is, perhaps, inevitable that certain subjects should be treated in a didactic manner without adequate discussion of conflicting points of view, and that there should be some statements which are more or less ambiguous. For instance, diphtheria toxoid is not given the attention which is its due; the work of the Italian school has been entirely disregarded in the discussion of the infectious agent of measles; and it is obviously an error that infection of human beings by *Brucella abortus* is acquired through the medium of hog's milk.

Nevertheless, the book stands as an excellent presentation of the broad subject of public health and hygiene, and deserves a place among the reference books of the practicing physician as well as on the shelves of the public health worker and the medical student. E. C. D.

BOOK REVIEWS

The Clinical Aspects of Venous Pressure. By J. A. E. Eyster. Pp. 135. Illustrated. New York: The Macmillan Company. 1929.

In one hundred and thirty-five pages, Eyster here sets forth the modern conception of venous pressure as an easily accessible and very valuable indication of the functional condition of the circulatory system, especially the heart—the relation to capillary pressure, gaseous exchange, edema, diuresis, etc. Those who study this book will probably do venesection more often. The diction, arrangement and condensation of argument are excellent; and while a good bibliography is included, the general presentation is largely an expression of Professor Eyster's own well-considered experience.

E. S. K.

Gonorrhea and Kindred Affections—Gonorrhea in the Male, Chancroid and Verruca Acuminata, by George Robertson Livermore; and **Gonorrhea in the Female, and the Infectious Granulomata,** by Edward Armin Schumann. Pp. 257. Illustrated. New York and London: D. Appleton & Company. 1929.

This work is concise and thorough and an invaluable addition to the library of the general practitioner or those limiting their practice to this specialty.

Each chapter is replete with scientific and practical facts correlated from the world's medical literature on the subject. Due credit is given the investigations and conclusions of the many authors quoted, accompanied by straightforward personal observations and comments by the writers. The illustrations are particularly worthy of mention.

L. P. P.

Tumors Arising From the Blood Vessels of the Brain, Angiomatous Malformations, and Hemangioblastomas. By Harvey Cushing and Percival Bailey. Pp. 219. Illustrated. Baltimore: Charles C. Thomas. 1928.

This is a beautiful example of what a medical monograph should be. It is based on twenty-five cases from Doctor Cushing's material; fourteen venous or arterial angiomas of the cortex, and eleven cerebellar hemangioblastomas. The case reports are fully illustrated with photographs, photomicrographs, and drawings. The literature on the subject has been studied with great care (there are two hundred and sixty-one titles in the bibliography), and the gross and microscopic anatomy of specimens removed at operation or examined postmortem is thoroughly described and illustrated.

This study puts our knowledge of these rather rare lesions on a firm basis. All who are interested in the advancement of medical knowledge will find it fascinating and valuable reading.

E. B. T.

Getting Ready to Be a Mother. A little book of information and advice for the young woman who is looking forward to motherhood. By Carolyn Conant Van Blarcom. Second edition. Pp. 236. Illustrated. New York: The Macmillan Company, 1929. Price, \$1.75.

In the second edition of her book, "Getting Ready to Be a Mother," Miss Van Blarcom has added to her advice to the expectant mother a second part which deals with the care of the baby during the first year of life, with particular attention to the preparation of formulas and changes in diet. This is a good book for the intelligent patient. It is medically accurate, sufficiently detailed to answer practically all the questions of an inquiring mother, and yet written in a manner easily understood by a nonmedical reader.

One wonders if the elaborate preparation recommended for a home delivery is necessary. With our present knowledge of asepsis it seems that the average physician should be able to deliver safely with a limited sterile field.

E. A.

Principles of Pathology for Practitioners and Students. By H. D'Arcy Power and William W. Hala. Pp. 787. Illustrated. New York: D. Appleton & Company. 1929.

This book is a 787-page textbook of pathology, divided into 1077 sections.

It is interesting to note that Doctor Power is professor of pathology of the College of Physicians and Surgeons, San Francisco. Doctor Hala is pathologist at Kings County Hospital, Brooklyn, New York.

The book is divided into general and special pathology. The sectional method of writing makes for ease of reference, but does not allow any discussion of undecided points. The viewpoint of the authors is that of a biologist in the larger sense. Only tested facts are put into the book. Some of the better written sections include those on the cell and its relation to life; those on the reaction of physical changes; and those on development errors. The entire body, including the nervous system,

(Continued on Next Page)



Union Square Building

Exclusively

PHYSICIANS / SURGEONS / DENTISTS

350 Post Street, Facing Union Square

Garfield 1014

As a General Antiseptic

in place of

TINCTURE OF IODINE

Try

Mercurochrome - 220 Soluble

(Dibrom-oxymercuri-fluorescein.)

2% Solution

It stains, it penetrates, and it furnishes a deposit of the germicidal agent in the desired field.

It does not burn, irritate or injure tissue in any way.

Hynson, Westcott & Dunning

Baltimore, Maryland

New York Post-Graduate Medical School and Hospital

Offers a course of six months' duration in **UROLOGY**
Beginning January 2nd, 1930

The course includes demonstrations of urological operations and diagnostic procedures; cystoscopy and endoscopy; operative urologic surgery on the cadaver; roentgen interpretation of urologic diseases; pathology, bacteriology and biochemistry of genito-urinary diseases; regional anesthesia as applied to urology, etc.

For descriptive booklet and further information address

THE DEAN

313 East Twentieth Street

New York City

BOOK REVIEWS

(Continued from Previous Page)

has been included. The illustrations are from the Kings County Hospital and the Pathological Museum of the University of Geneva. Some of these are made by color photography.

The appendix includes the preparation of tissues and technique of preservation, photographing of specimens, with a chapter on cell heredity. We miss the inclusion of the newer classification of brain tumors.

This book will make a very desirable addition as a reference work, but its short sections make it hard to read.

Z. E. B.

Diabetes and Its Treatment. (The National Health Series, edited by the National Health Council.) By Frederick M. Allen. pp. 98. New York and London: Funk & Wagnalls Company. 1928.

This is a lucid, concise, pocket-size edition of a diabetic manual by one of the leading authorities on diabetes. It contains only the essentials for the diabetic, but little of importance is omitted.

The chapters on the symptoms, causes, and physiology of diabetes are simply stated. The exposition of the treatment by diet and by diet and insulin is clearly and sanely put. A chapter on the general care and prevention and treatment of complications is included. Brief tables of standard weights, food values and simple diabetic recipes conclude the volume.

Its simple statement of the essentials for the diabetic, its convenient size and low cost, make it a distinct addition to the numerous manuals for diabetics now available.

D. E. S.

The Normal and Pathological Physiology of Bone—Its Problems. By R. LeRiche, A. Policard, Sherwood Moore, and J. Albert Key. Pp. 236. Illustrated. The C. V. Mosby Company, 1928. Price, \$5.

This book is good but hard to read. It does not follow any creed. The facts they know, the authors state. But when unknown, content they wait. They do not try to run a bluff. By talking weird and nebulous stuff. They frankly say they do not know, Not "X supposes so and so."

Whoever works at all with bone Should have this book his very own. So he to it can oft refer For aid in problems that recur.

Physically, the book is fair. Though illustrations rather spare. But those there are, are good and plain And them the legends well explain.

An eight-page bibliography Is there for all who wish to see The work that has gone on before, Should he care to delve in this treasure store. The print is large, the paper good; Made from our forest's very best wood.

Now for the contents; should you peruse These pages for the authors' views— You'll get, I vow, not only these But the background that each author sees. By treating historically their themes They add a lot, to me it seems.

In Chapter One they try to show What bones are and how they grow. Chapter Two, most plainly tells Of preosseous tissue and some cells. Chapter Three, is given o'er To how bone gets its calcium store. Bone resorption comes to the fore For twenty pages in Chapter Four. The subject matter of Chapter Five Is forming and shaping of bones alive. Poor Chapter Six leads up to tedium; It's the old, old story of periosteum. But in Chapter Seven again we wake, For it deals with the healing of bones that break. The authors tell in Chapter Eight What happens when we bones translate. Yes, transplant is the usual word, But in eight and plant no rhyme is heard. All of Chapter Nine's observations Are on heterotopic ossifications. In Chapter Ten we learn what be Ossification's law in pathology. In Chapter Eleven some thoughts they fling On what the future may possibly bring.

The book as a whole, I say, is good. But 'specially recommend I would Four chapters: three, five, seven, and eight, For each of these is really great.

A. L. F.

(Continued on Page 14)



For Medicinal, Industrial and Drinking Purposes

STATE BOARD REVIEW

Preparation for State Board
Examination

WRITTEN OR ORAL

DR. MORRIS STARK
4405 So. Broadway
LOS ANGELES, CALIFORNIA

*For those
stubborn Fall coughs
and colds—*

here is a highly effective remedy prescribed widely for sound scientific reasons and accepted by the Council of Pharmacy and Chemistry of the American Medical Association—

THIOCOL SYRUP 'ROCHE'

In its points of difference lie its points of excellence. Unlike popular cough nostrums Thiocol Syrup is a strictly one-drug remedy devoid of narcotics or sedatives. And remember Thiocol, the only drug in Thiocol Syrup, exerts an anti-catarrhal beneficial effect upon the respiratory tract and definitely aids in subduing the cough. A trial will convince you of its marked therapeutic effectiveness.

"Council" Accepted

Thiocol Syrup 'Roche'



[[Marketed in 6 oz. bottles. Never advertised to the laity.
A bottle for your home use will be sent upon request]]

Hoffmann-La Roche, Inc.

Makers of Medicines of Rare Quality

NUTLEY  NEW JERSEY

⌘ Dosage ⌘

Adults: 1 to 2 teaspoonfuls every 2 hours.

Children: $\frac{1}{2}$ to 1 teaspoonful, according to age.

No incompatibilities

SUTTER HOSPITAL

Twenty-eighth and L
SACRAMENTO, CALIFORNIA
Telephone Main 7676

Thoroughly efficient surgical, medical, obstetrical and pediatric divisions, supported by exceptional clinical and X-ray laboratories, with physical therapy and dietetic facilities. Graduate staff throughout. Accredited by A. C. S.

A friendly welcome to out-of-town patrons



Graduate School of Medicine

The Tulane University of Louisiana

*Approved by the Council on Medical Education
of the A. M. A.*

Post-graduate instruction offered in all branches of medicine. Courses leading to a higher degree have also been instituted.

For bulletin furnishing detailed information
apply to the

DEAN

Graduate School of Medicine

1551 Canal Street

New Orleans, La.

No
Starch

Listers
CASEIN-PALMNUIT

Dietetic Flour

Starch-free Diabetic Foods that are appetizing are easily made in the patient's home from Listers Flour. It is self-rising. Ask for nearest depot or order direct.

LISTER BROS. Inc., 41 East 42nd St., NEW YORK

BOOK REVIEWS

(Continued from Page 12)

Diabetic Surgery. By Leland S. McKittrick and Howard F. Root, with a foreword by Daniel F. Jones and Elliott P. Joslin. Pp. 269. Illustrated. Philadelphia: Lea and Febiger, 1928.

This monograph contains 269 pages, 79 engravings, and two colored plates. The text consists of a review of the recent literature on diabetes in relation to surgery; the general problem of handling the diabetic patient; the experiences of the author, with illustrated cases.

The little book is a definite and practical contribution to the medical literature on the surgical treatment of the diabetic patient. It points out the importance of coöperation between the metabolist and the surgeon. It is written in pleasing form, and every angle of the illustrated cases is discussed from a practical standpoint. Its value is greatly enhanced by the detailed descriptions of the preparation of glucose and other solutions for intravenous therapy, as well as concrete information with reference to dosage of insulin, etc.

The reviewer can highly recommend this book to anyone doing surgery on diabetic patients.

L. B.

The Tonsils and Adenoids and Their Diseases: Including the Part They Play in Systemic Diseases. By Irwin Moore. Pp. 395. Illustrated. St. Louis: C. V. Mosby Company, 1928. Price, \$6.50.

This book is an excellent résumé of the accumulated literature up to the present date, together with the opinions of the author from his own experiences. The mass of literature on the subject makes necessary rather brief discussions in a short monograph on such a large subject, but one of the chief values of this book lies in the fact that the author has touched on nearly every important angle of the subject and has given complete references for those who wish to go into a detailed study of any particular question.

The author's descriptions of operative technique are of necessity very sketchy and are not intended to be used as complete instruction as to surgical technique.

A note of warning should be sounded in his notes on local anesthesia. I believe he makes a mistake even in suggesting the use of 4 per cent cocaine solution to inject tonsils. The injection of cocaine 4 per cent in tonsil work has long been discontinued in the United States, almost universally.

All in all the book is well written and is an excellent résumé of the subject.

H. A. F.

American Medicine and the People's Health. An outline with statistical data on the organization of medicine in the United States, with special reference to the adjustment of medical service to social and economic change. By Harry H. Moore. Pp. 647. Illustrated. New York: D. Appleton & Company, 1927.

This book has been compiled by a nonmedical author on the basis of available statistics on medical organization. It holds no brief for the practice of medicine and surgery as carried on at the present time. Those of us who do not rely implicitly on statistics may object to some of the figures submitted.

It is well written and is interesting and stimulating reading. Many facts are brought out which will evoke surprise to be followed by healthy thought concerning the future status of our profession. Much of the material of the book is in line with what Ray Lyman Wilbur has frequently called attention to in his talks before medical audiences. One should read it not only as a source of information, which few of us possess, but as a stimulus to constructive thought.

E. H. F.

Asthma—Its Diagnosis and Treatment. By William S. Thomas. Pp. 279. Illustrated. New York: Paul B. Hoeber, 1928.

The author of this useful book on the management of asthma patients aims to bring our present viewpoint on this subject up to date. The excellent chapters on the causes and nature of asthma, as well as those on protein skin tests and their technique, should be of great help to the general physician and medical student not familiar with recent developments in this field. Of particular interest—and in this respect Doctor Thomas' book differs from many of the recent works on this subject—is the great attention given to a discussion of bacterial asthma and the value of autogenous vaccines. The author's contribution to our knowledge of bacterial asthma and its treatment is well known to those who have followed current medical literature, and deserves serious consideration. The good results obtained by the author with properly prepared vaccines in selected cases have been confirmed many times by the reviewer.

The chapter on "Some Causes of Disappointing Results Following the Treatment of Asthma" might well have included a discussion of the many stumbling-blocks, such as long-standing pathological damage and paranasal sinus infections which at times render our best efforts ineffective.

S. H.

(Continued on Page 16)

Approved Professional Protection

The best test of approval is *sustained* support. Approbation which comes only from promises does not endure.

Permanence requires performance.

The Medical Protective Contract has *continuously* since its inception received the support of more professional men than any other. Medical Protective Service has proved trustworthy.



THIRTY YEARS OF
SPECIALIZED SERVICE



The Medical Protective Company

of Fort Wayne, Ind.

360 North Michigan Boulevard : Chicago, Illinois

MEDICAL PROTECTIVE CO.

360 North Michigan Blvd.
Chicago, Ill.

Kindly send details on your plan of
Complete Professional Protection

Name _____

Address _____

City _____

11-29

LOUIS CLIVE JACOBS, M. D., Urologist

Announces the Removal of His Offices to the Fourteenth Floor

FOUR FIFTY SUTTER, SAN FRANCISCO

OCTOBER 1, 1929

A LIMITED NUMBER OF LARGE, SPACIOUS OFFICES
NOW AVAILABLE

THE BUTLER BUILDING

SOUTHWEST CORNER GEARY AND STOCKTON STS.

A modern class A medical building.
In the center of San Francisco's shopping district
facing Union Square.

For information apply
SUPERINTENDENT OF BUILDING
Douglas 5387

CABLE WARP

TOWELS

Westinghouse

MAZDA LAMPS

O'KEEFFE & COMPANY

Incorporated

WHOLESALE DEALERS

BEDDING / BED LINENS / CURTAINS

Carpets / Towels / Table Linens / Furniture

788 Mission Street

San Francisco

Telephones

Sutter 7599

Sutter 3458

BOOK REVIEWS

(Continued from Page 14)

The Physiology of Love. By George M. Katsalnos. Pp. 326. Privately printed at Boston, Mass., 1929.

This is, without doubt, the worst contribution on sex studies which the reviewer has ever read. In fifty-three pages of introduction the author wanders about on a philosophical journey which touches upon so many abstract subjects that the reader simply cannot extract any one definite line of thought. This introduction is in no way related to the title.

The volume is characterized by many startling statements which the author dogmatically makes, based upon his affirmed thirty years of genito-urinary practice in Greece and other countries.

The chapter on masturbation repeatedly and emphatically states that this condition is a result of example and example only, which is hardly in keeping with the theories of accepted authorities.

Quoting from the author, the following is startling, to say the least:

"All those mental wrecks, much to be pitied, as described by Freud's Psychopathia-Sexualis (and among whom we might place the author, Freud The Great), are recruits of this class, children mentally—in their relations, sexual initiates at a very tender age."

A characteristic statement exemplifying the inconsistency of the author is found in the chapter entitled "Onanism":

"An honorable physician can never become a rich man. A rich physician is a thief, a swindler, an individual devoid of human feelings," etc., etc.

If we are to accept this author's opinion, then we will have to agree that:

"Woman is attracted to man by his virility; his companionship, his value depends upon that organ (phallus) and no other part of his body."

Conversely, "What attracts reasoning man (to woman) is not her physical beauty, nor the provocation of woman's body, but her soul."

Nothing new is presented and the repetition of the old is very badly written.

The volume offers nothing to a medical man and should hardly be permitted to fall into the hands of the laity.

B. S. F.

Modern Methods in the Diagnosis and Treatment of Renal Disease. Modern Medical Monographs. Edited by Hugh MacLean. Third edition. Pp. 135. Illustrated. Philadelphia and New York: Lea & Febiger, 1927. Price, \$2.75.

The book is a monograph on diagnosis and treatment of diseases of the kidney. It is well written and well gotten up. It should prove a valuable reference book to the physician doing general medical work and as a reference book for the student in medicine.

Theories of kidney function are expounded in detail. There are some interesting comments on the presence of albumin in the urine which are drawn from the author's experience during the Great War, with large numbers of men who apparently had mild degrees of albuminuria. The author is prone to place less importance upon the presence of albumin in the urine than we are here in America, and also prone to discount the presence of albumin in the urine much more than do any of the life insurance companies of this country.

Pathological data are given in detail and the description is excellent, but the colored plates are not what they might be.

There are detailed descriptions of the various renal tests with emphasis on the careful examination of the urine itself by ordinary methods as well as certain quantitative methods for the estimation of urea in the urine. It is an interesting comment that the author has set aside the examination of the blood urea concentration as a test of greatest importance while he discounts the other blood chemical tests to a certain degree. There is an excellent short differential diagnosis of the conditions in which the blood urea level is elevated.

There is a detailed account of technical points involved in the various chemical and functional tests of the kidneys and their ability to perform their excretory functions.

A section is devoted to the general symptoms of acute and chronic nephritis with particular relation to the cardiovascular system with comment on the relation between hypertension and nephritis. A technical account is given along with drawings of such simple things as taking blood pressures which does not seem necessary in this type of text.

The section on treatment of patients with kidney disease is well written and contains a good outline for the practitioner to follow.

On the whole the book is a very good exposé of its subject and contains a lot of good common-sense data that will keep the reader from going astray should he choose to follow the author's concept of diagnosis and treatment.

E. L. B.

BOOK REVIEWS

The Road to Health. (The Jayne Foundation Lectures for 1929.) By C.-E. A. Winslow. Pp. 151. New York: The Macmillan Company. 1929. Price, \$2.

This little book consists of three chapters, each a separate lecture. It deals with the history, accomplishments and aims of preventive medicine, and is written in a delightfully simple and concise form which is possible only by one who is master of his subject.

It is a book which is well worth reading by every medical man, particularly if he be one of those who finds himself somewhat out of sympathy with the programs of certain groups who are interesting themselves in the field of preventive medicine. E. C. D.

A Manual of Otology. By Gorham Bacon and Truman Laurance Saunders. Eighth edition. Pp. 576. Illustrated. Philadelphia: Lea & Febiger. 1928. Price, \$4.50.

The book in general is very good and fairly comprehensive. The part relating to middle ear treatment is particularly good. The section on acute ears and mastoiditis does not measure up to the rest of the book, as some of the methods seem out of date and methods of diagnosis somewhat obscure. For example: In several cases he refers to the use of leeches with an obvious acute mastoid. The differential diagnosis for other acute diseases at times seemed uncertain and not very clear. The section on labyrinthine diseases has some very good points, but is not very comprehensive. Throughout the book are many personal cases of the authors, some of which help to make it more interesting, but many of them could be left out without detracting from the book. R. F.

What Everyone Ought to Know. By Oliver T. Osborne. Pp. 313. Springfield, Illinois: Charles C. Thomas. 1929. Price, \$2.50.

This book is an excellent addition to our ever increasing sources of authentic information from which the lay public may learn ordinary rules of physiology, personal hygiene, and symptoms of disease.

It sets forth, clearly and scientifically, answers to questions which arise constantly in the minds of all regarding diet, nutrition, growth and development, bodily functions and preventive medicine.

The chapters on health axioms, prevention of disease, and nostrums and quackery are excellent.

In some of the other chapters there is a tendency to be dogmatic, and a suggestion of "moralizing" that tends to mar the effect of purely scientific information. For example: "Smoking at the present day by school and college girls, by clerks, office girls, factory girls, nurses, and even teachers is deplorable." And again: "Drug addiction is the cause of the rise in crime in boys and girls from fourteen to seventeen." With the exception of this one feature, however, the book may be highly endorsed. R. A. R.

Varicose Veins, With Special Reference to the Injection Treatment. By H. O. McPheeters. Pp. 208. Illustrated. Philadelphia: F. A. Davis Company. 1929. Price, \$3.50.

Now that the medical profession in this country has at last accepted the injection treatment of varicose veins as the best method of dealing with this condition, and the various operative procedures are rapidly becoming obsolete, there is great need of a textbook in which all the details of the new treatment are clearly set forth.

Dr. McPheeters, one of the pioneers in the injection method in the Middle West, has written a thoroughly satisfactory treatise on the subject. The volume is concise, comprehensive, and interesting throughout.

The various surgical operations are described in a brief chapter, the conclusion being that none of them are satisfactory and all are dangerous—a fact which it has taken American surgeons a long time to learn. The next ten chapters cover the injection treatment in minutest detail, including history, solutions, armamentarium, technique, after-care, pathology, results, complications, etc. The author's treatment of varicose ulcer forms an interesting chapter, and the book ends with a very complete bibliography, chiefly from foreign journals.

As to criticism, it may be stated that anyone wishing to learn the method will make no mistake in choosing this as his textbook. The injection method, however, should always be learned, like gastro-enterostomy, by assisting an experienced operator, not merely by reading a book on the subject. Many men, however, competent in ordinary intravenous work, never seem to acquire the knack of doing these injections, and extensive sloughs

(Continued on Next Page)



Union Square Building

Exclusively

PHYSICIANS / SURGEONS / DENTISTS

350 Post Street, Facing Union Square

Garfield 1014

As a General Antiseptic

in place of

TINCTURE OF IODINE

Try

Mercurochrome - 220 Soluble

(Dibrom-oxymercuri-fluorescein.)

2% Solution

It stains, it penetrates, and it furnishes a deposit of the germicidal agent in the desired field.

It does not burn, irritate or injure tissue in any way.

Hynson, Westcott & Dunning

Baltimore, Maryland

New York Post-Graduate Medical School and Hospital

Offers courses in **DERMATOLOGY AND SYPHILOLOGY** including

Practical Instruction in the Diagnosis and Treatment of Diseases of the Skin; Syphilis and Cutaneous Cancer; embracing Special Syphilotherapy, Mycology, Pathological Histology and Internal Aspects of Cutaneous Medicine. These courses are adapted to the needs of the practitioner of medicine as well as the specialist.

Physicians from approved medical colleges are admitted.

For descriptive booklet and further information address

THE DEAN

313 East Twentieth Street

New York City

BOOK REVIEWS

(Continued from Previous Page)

have become so common as to endanger the increasing popularity of the method. It is unfortunate, in this connection, that the author's technique is unnecessarily complicated and difficult. He advises elevating the leg before, rather than after, the insertion of the needle. All other writers insist on maximum distention of the vein with blood to make entry easy, after which the leg may be raised to forty-five degrees to drain it of blood before injecting, the syringe being held rigidly against it during the raising, so that the needle will remain in the vein. Furthermore, the attempt to treat an entire leg at one sitting seems unwise, better results being obtained by repeated sittings, except when only one or two veins are present. The important Trendelenberg test is mentioned, but unfortunately not described.

The author is fair in his comparison of the various solutions, except that he overemphasizes the toxicity of the very valuable mercurials, and barely mentions the occasional but severe reactions from quinin and from sodium salicylate. In the chapter on the treatment of ulcer, a short discussion of the various healing medications, which have proved useful in the hands of others, would not be out of place.

H. S.

Arthritis and Rheumatoid Conditions—Their Nature and Treatment. By Ralph Pemberton. Pp. 354. Illustrated. Philadelphia: Lea & Febiger. 1929. Price, \$5.

Arthritis is one of the oldest diseased states of which there is any historical record. The reptiles of the Mesozoic Age suffered from its ravages; it was the disease par excellence of the ancient Egyptians, and because of it the more famous European spas have done a land-office business for over two thousand years. The World War; state medicine and compensation insurance opened our eyes to the economic burden attributable to this disease group. In England alone, arthritis causes nearly one-sixth of the total industrial disability, representing a loss to that country of three million weeks of work per annum. In the United States forces during the year preceding the armistice there was an incidence of sixty thousand cases.

The volume of medical literature dealing with arthritis is appalling, particularly as regards treatment, since the disease is characterized by spontaneous remissions which unduly prejudice the incautious observer. To the Herculean task of correlating, summarizing and bringing up to date this vast literature, the author has applied the knowledge gained in fifteen years of intensive clinical study, laboratory research, teaching and writing on this subject. The result is a masterly monograph of which the first half deals with etiology, pathology, and symptomatology; while the second half covers all phases of treatment, and attempts to allocate to each therapeutic measure its proper value. It is only natural that the works of Pemberton and associates should loom large in amount of space granted to their recital, yet the author's generous recognition of other workers and his hesitance in jumping to conclusions are refreshing to one who has read his earlier efforts.

Conclusions:

1. The American Committee for the Control of Rheumatism has adopted (1928) the Goldthwait classification of arthritis. This is essentially the classification accepted by the British Ministry of Health (1922). Therefore, to permanently eradicate the errors due to differences in terminology one should henceforth adhere to the terms "atrophic" and "hypertrophic."
2. While many etiological factors have been convincingly demonstrated to have been responsible for the production of arthritis, no one of these is invariably present as in the specific diseases. Therefore, each case deserves intensive individual study.
3. Therapy falls into four general groups:
 - (a) Detoxification—elimination of focal infection, whether bacterial or parasitic; colonic therapy; vaccine therapy; etc., etc.
 - (b) Improvement in general health—diet; rest; various forms of physiotherapy; glandular therapy; medication; etc., etc.
 - (c) Improvement in circulation, both general and local—various forms of physiotherapy; postural training; sympathetic ganglionectomy, etc., etc.
 - (d) Prevention and correction of deformities.

Everyone remotely interested in the problem of the arthritic—and that includes almost all of us—should at least glance through this volume. Those who are intimately associated with these pathetic invalids in daily contacts will make this excellent survey their own.

H. C. P.



For Medicinal, Industrial and Drinking Purposes

STATE BOARD REVIEW

Preparation for State Board
Examination

WRITTEN OR ORAL

DR. MORRIS STARK
4405 So. Broadway
LOS ANGELES, CALIFORNIA

5+

